



# Forestry, Wildlife & Fisheries Update Newsletter

Department of Forestry, Wildlife and Fisheries  
 George Hopper, Department Head

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 Website: <http://fwf.ag.utk.edu>

## In This Issue

Notes from the Web - Resources for Urban Forestry .....	Page 1
Wildlife Management Calendar .....	Page 2
Hardwood Analysis and Trends - June 2005 .....	Page 3
Allelopathy .....	Page 4
Damage from Increment Borers .....	Page 4
Step Up Basis is Important for Forest Owners Inheriting Timberland .....	Page 5
Lightening .....	Page 6
Fruit Dropping Early .....	Page 6
Pruning Trees .....	Page 7
Forestry Best Management Practices (BMP) and Stream Crossings .....	Page 8
How to Choose a Logger .....	Page 9
Clean Energy Grant .....	Page 9
Wood Chip Quality .....	Page 10
Time to Start Treating! Phytosanitation Regulations .....	Page 10

## Notes From the Web- Resources for Urban Forestry

*Samuel Jackson, Web Coordinator*

The Tennessee Urban Forestry Council has a great website with lots of resources for those that are interested in urban forestry. Their website can be found at <http://www.tufc.com>.

Part of their website includes a Tree Information area where users can find information on tree pruning, the impacts of tree topping, damaged tree care and management, as well as more basic information such as tree identification and selection for planting. Another key feature of the site is the information relating to the Tennessee Landmark, Historical, and Landmark tree recognition programs. These programs seek to recognize trees that have important historical or societal significance in Tennessee. Application forms and program guidelines can be found on the site.

Two of the newest features added to the site include an “Ask an Expert” section as well as a moderated discussion group. The “Ask an Expert” feature allows anyone in the state to enter in a question for an urban forestry professional. The appropriate professional will answer the question via email to the person who asked. The moderated discussion forum gives those who are interested in urban forestry a new avenue to communicate. The site also boasts a large set of urban forestry links as well.

Visit the Tennessee Urban Forestry Council’s website today for more information!

For more information contact: Sam Jackson at (865) 974-2946 or [samjackson@utk.edu](mailto:samjackson@utk.edu)

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## Wildlife Management Calendar For July

*Craig Harper, Associate Professor, Wildlife Management*

### **Habitat Management**

Bushhog and spray perennial forage food plots for weed control if necessary

- see *Growing and Managing Successful Food Plots for Wildlife in the Mid-South*, PB 1743, for herbicide recommendations

Collect soil test samples from plots to be planted this fall and lime now as needed

Plant japanese/browntop millet around beaver sloughs and other areas that will be flooded in November for ducks

Construct/repair dikes and water-control structures for flooding fields/woodlands for waterfowl this fall/winter

Spray woody competitors in native warm-season grasses and other old-field habitats

- multiflora rose, privet, sericea lespedeza, sweetgum, elms, etc.
- Roundup, Garlon, Arsenal, Ally, and PastureGard should be considered

### **Wildlife Damage/Population Management**

Put up chicken-wire fence 2 feet high around vegetable gardens to protect them from rabbits

Put up a 2- or 3-strand electric fence (one strand 6 inches above ground and the other 6 inches higher) to keep groundhogs and raccoons out of vegetable gardens

To repel deer from vegetable gardens, erect a single-strand electric fence (2 ½ feet above ground) with aluminum tabs attached every 3 – 5 feet. Smear peanut butter on the aluminum tabs. Deer are attracted to the peanut butter; however, when they touch the aluminum tabs with their mouths, they learn to stay away.

Nuisance crawdads in the yard may be remedied by pouring boiling water down the spout of the mound.

Refer to *Managing Nuisance Animals and Associated Damage Around the Home*, PB 1624, for additional wildlife damage management information.

## **Hardwood Analysis and Trends (HAT) – June 2005**

*David Mercker, Extension Assistant, Forest Management*

Trends in hardwood lumber demand and price remain consistent from the previous two issues of **HAT**. Simply put, red oak prices continue to drift downward, hard maple remains very strong, and poplar is gradually increasing. Housing sales, both new and existing units, directly impact hardwood lumber prices. The sale of new single-family homes increased 13.3 % in the 12 month period beginning April 2004. Building permits, often an indication of future new home construction, are up 2.9% from the same time last year.

**Note:** We are considering adding two more species to **HAT**, depending upon reader requests. Both ash and hickory are a component of Tennessee forests and are utilized by the lumber industry. If you would like to see these two species added to **HAT**, please contact me at [dcmercker@utk.edu](mailto:dcmercker@utk.edu), or 731-425-4703.

**Red Oak** – during May 2005, common grade red oak lumber fell an additional 3.5 percent; kiln dried prices for average red oak lumber have suffered approximately 22 percent reduction over the last seven months; the far-reaching decline in common grades of red oak is unmatched over the past decade; maple continues to replace red oak as the lumber of choice for many home furnishings; prices for better quality red oak lumber remain steady.

**White Oak** – throughout May 2005, prices for average quality white oak lumber are unchanged; overall, prices for white oak have fallen less steeply than red oak; at present, average quality white oak lumber prices are nearly identical to red oak (only a 2% difference).

**Poplar** – poplar lumber continues to be the bright spot for Tennessee lumber with the strength attributed to the Asian demand (particularly average quality lumber); the finer quality lumber enjoys a strong domestic market, used for molding and trim; poplar is a sizable component of Tennessee forests, and is commonly associated with oaks and gums; average lumber prices increased an additional 1.3% since last month.

**Black Cherry** – cherry lumber is appealing to many consumers as a appearance wood; of the six species analyzed by **HAT**, cherry lumber prices exceed all others; even though demand is very strong, recent over-production of cherry lumber has caused excess supply leading to a nearly 6% drop in prices of average lumber over the past two months; apparently some saw mills have shifted a portion of their traditional red oak lumber production to cherry, contributing to excess cherry lumber supply.

**Sugar Maple** – at present, production of maple lumber meets the demand, causing prices to remain strong and stable; even though sugar maple trees are found throughout Tennessee, better quality sugar maple is specific to certain regions within the state; in some locations, its presence is so limited that saw mills have a difficult time finding enough volume to reliably fill their lumber orders; generally maple prefers slightly cooler climates and rich soils.

**Black Walnut** – business is steady for this species with demand solid, inventories low, and prices firm; once a favored choice for veneer paneling and for living room and dining room furniture made in the United States, walnut is now a rare find as the major wood source for the same; uses today are primarily for jewelry boxes, trophy bases, gunstocks, and miscellaneous specialty items;

Summarized with permission from Hardwood Market Report, Memphis, Tennessee.

For more information contact: *David Mercker at 713-425-4703*  
[dcmercker@utk.edu](mailto:dcmercker@utk.edu)

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## Allelopathy

*David Mercker, Extension Assistant, Forest Management*

Some plants produce chemical inhibitors that are released into the environment having an injurious and even toxic affect upon other plants. The botanical term for this is **allelopathy**. The poisonous compounds may be produced in any part of the plant; however, the highest concentrations occur in foliage and in fruits. Plants release these compounds into the environment primarily as the plant tissue decomposes.

In most cases, the allelopathic chemicals pass into the soil before being absorbed by the host plant. Clay soils and soils with high organic matter sometimes deactivate the chemicals preventing them from being absorbed by plants..

An easily observable affect of allelopathy is the exclusion of shrubs and herbs from beneath walnut trees. The class of allelopathic chemical produced by walnut is known as juglone. Juglone will influence some trees, shrubs, and herbs. Homeowners often discover the phenomena when attempting to establish flower beds near walnut trees. Other common hardwood trees that sometimes have an allelopathic affect include: oaks, sugar maple, hackberry, juniper and sassafras. Shrubs and grasses such as laurel, sumac, ferns, fescue and goldenrod are allelopathic too.

Site preparation, including burning and bedding, can decrease the occurrence of allelopathy. For homeowners who are interested in establishing plants under or near walnut trees, see the following Ohio State website:

<http://www.ag.ohio-state.edu/~ohioline/hyg-fact/1000/1148.html>.

Reference: Wenger, Karl F. 1984. Forestry Handbook.

For more information contact: *David Mercker at 713-425-4703*  
[dcmercker@utk.edu](mailto:dcmercker@utk.edu)

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## Damage from Increment Borers

*Larry Tankersley, Extension Specialist, Forest Management*

An increment borer is a tool used to extract cores from living and dead trees for analysis of the tree's age and its growth. Increment boring causes injury that is compartmentalized by the living tree. Compartmentalization is a boundary-setting process that resists the spread of cell death and infection by microorganisms. Healthy, vigorous trees form these boundaries on either side of the borer injury and tend to form roughly conical column above and below the injury. Near the borer injury along the horizontal plan, the amount of wood affected inside the tree is equal ton the planar(flat) are of the auger itself, extending our to the edges of the auger threads. Although the core itself is quite narrow in diameter, the increment borer is considerably wider, approximately three times the width of the core measured at the maximum diameter at the threads on the auger tip. As the tip enters the wood, the sharp edge on the tip cuts through the wood and core enters the hollow shaft of the borer. At the same time, however, the auger significantly compresses wood on either side of the hole.

Several studies offer insights on the probable effects of coring trees and the resistance potential of tree species to decay and disease. In general, conifers sustain little injury from increment borers, mainly because of their ability to rapidly fill the hole with resin and compartmentalize the damage around the hole. In contrast, hardwoods can be considerably affected primarily by discoloration (staining) of the wood and by fungal infections, although some hardwood species are more affected than others. Most oaks appear to be resistant to both internal discoloration and fungal attack, whereas yellow birch is particularly susceptible to both. Both red maple and sugar maple are prone to discoloration, red maple appears less prone to fungal

decay. Disinfecting the borer with alcohol does not appear to prevent discolorations and fungal decay from occurring. Plugging holes likewise provides little benefit and may cause more harm than good.

The sensitivity of tree species to decay is also a function of temperature and moisture. In the U.S., tree species found in warm, humid environments, such as the SE coastal plains, are more prone to fungal decay than are species found in drier and/or cooler environments, such as the SW or Rocky Mts. Coring during the growing season is preferred, especially for hardwoods, as the wounds are more rapidly compartmentalized.

In summary, the evidence is strong that coring minimally affects conifers. The evidence is also strong that coring affects the internal physiology and health of hardwoods to varying degrees. Coring however provides valuable management information. The importance of this information must be weighed against the injury inflicted.

This information was taken from an article by Henri Grissino-Meyer in *Tree-Ring Research*, Vol. 59(2), 2003, pp. 63-79.

For more information contact: *Larry Tankersley at 865-974-7346*  
[ltanker1@utk.edu](mailto:ltanker1@utk.edu)

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## **Step Up Basis is Important for Forest Owners Inheriting Timberland**

*Larry Tankersley, Extension Specialist, Forest Management*

Many family farms and land ownerships were acquired many years ago when land values were much lower than they are today. These acres have a modest to low basis at best. Timber basis on these properties are often non-existent as the timber has either grown in on abandoned fields or was not allocated when the current owner obtained the land.

A basis in timber or land for that matter is very important for reducing the taxable amount of a capital gain when the timber is sold or otherwise disposed of. Inherited capital property qualifies for a stepped up basis which means the basis to the heir(s) is the fair market value of the asset on the date of death rather than the low or zero basis of the decedent.

Many older timber owners often give the land and timber to the next generation in a sincere act of benevolence. The only problem with a gift is that it carries the low or zero basis to the recipient.

Consider Joe and Jim who grew up on the same forested ridge. Joe's dad and Jim's dad both purchased the land in 1965. The timber at the time was small and neither allocated a portion of their purchase price to the small timber. The timber on both properties was allowed to grow for the last forty years and became quite large. Both men died last spring. Joe's dad gave him the land three months before his fatal heart attack. Jim's dad bequeathed the land to him in his will. Joe and Jim went together and hired a consultant for a timber sale in the fall. The sale went smoothly and both made good money.

At tax time this year both went to the same tax preparer to settle up with the IRS. Both sales were long-term capital gains. When the tax preparer asked the guys about their basis and/or other costs of the sale, neither was certain of the concept and received the following lesson.

Joe paid taxes on the full amount (minus the consulting fees) because a gift carries the donor's basis. Jim paid **no taxes** since he only owned the timber for 5 months. He assumed the price he received minus the consultant's fees were the FMV of the timber in April plus the growth for the summer. Pretty nice for Jim not so good for Joe.

If you're not sure what your basis is in the timber let your heir's inherit it and make sure they have the timber appraised when they are executing your will.

For more information contact: *Larry Tankersley at 865-974-7346*  
[ltanker1@utk.edu](mailto:ltanker1@utk.edu)

## **Lightening**

*Larry Tankersley, Extension Specialist, Forest Management*

Several things come to mind when a tree is struck by lightening. First is the direct damage to the tree, akin to cheap shot by Mike Tyson. Second, is that the tree becomes a wick until the bark damage is closed through compartmentalization.

Watering therefore is very important for the a couple of weeks immediately after the strike. The tree literally should not want for water. However a soaked ground may suffocate the tree. The balance can be achieved with attention.

It is true that nutrition will be important, but externally applied fertilized potentially stresses the tree as the incorporation and processing of new nutrients especially nitrogen requires energy that may be better used to stop water loss in the near term.

I probably would not fertilize until this fall or winter in deference to stressing the tree further with an application while it is tending to healing the bark damage and other internal maintenance.

I am not aware of any new sealant. It may be there and I have just not caught up with the technology. At this point an have no sealant to recommend.

With the exception of supplemental water, the tree pretty much should be left to its own devices as it works through the lightening strike.

For more information contact: *Larry Tankersley at 865-974-7346*  
[ltanker1@utk.edu](mailto:ltanker1@utk.edu)

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## **Fruit Dropping Early**

*Larry Tankersley, Extension Specialist, Forest Management*

We have had several calls about trees dropping fruit early. What is going on? This is just a thought but I have noticed over the years that often/occasionally too many flowers are pollinated and trees abort a complement of the developing fruit and seed in favor of a manageable amount to carry to term. This phenomenon seems to occur early to mid growing season.

As fruit production in some years is generally the final use for excess "energy" the fruit abortion is seldom and indicator of a lethal condition, but certainly the tree should be watched/enjoyed.

For more information contact: *Larry Tankersley at 865-974-7346*  
[ltanker1@utk.edu](mailto:ltanker1@utk.edu)

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## **Pruning Trees**

*Wayne K. Clatterbuck, Associate Professor, Forest Management and Silviculture*

One of the best ways to keep young and old trees healthy and to minimize damage from decay is to prune trees properly throughout their lives. Dead, broken, weak and diseased branches and tops are entry ways into the trees for decay causing organisms.

A few guidelines for pruning trees are:

1. Start pruning early and continue pruning throughout the life of a tree. Prune and shape trees to avoid branch and trunk splitting. Heavy, low branches often split during storms or when burdened with flowers, fruit or snow.
2. The best time to prune live branches on a tree is during the dormant season in late fall and winter. Trees should not be pruned when they are actively growing. More tree injuries and bark slippage occur when pruning is conducted during the summer when they are growing.
3. A few tree diseases can be spread by pruning tools. Use clean tools during pruning and clean them afterward.
4. Remove broken tops and branches as soon as possible after injury. Prune broken tops back to the most vigorous branch. That branch will become the new leader. Use a slanting cut that is outward and away from the top branch.
5. Prune diseased and dead branches anytime. Cut dead branches back to the callus collar, but do not remove the collar of living tissue.
6. Prune living branches as close as possible to the trunk, without cutting the branch collar. Slant the cut lightly outward and downward. Make a smooth cut.
7. Do not apply wound dressings to the cut area after pruning. Research has shown that the dressing may inhibit the wound from healing over properly and could introduce substances that could be detrimental to the tree.
8. Pruning should occur on branches that are less than 2 inches in diameter. Pruning larger branches can be detrimental to tree health as well as cause large scars that are difficult for the tree to heal over. Design your pruning program such that inferior branches are pruned before they reach this size.

To help trees recover rapidly from pruning, take steps to increase the vigor of the tree by watering and fertilizing properly and when needed. Try to prevent tree wounds or injuries from mechanical equipment. Give your tree more space for crown and root expansion by cutting out the less valuable woody plants that may be crowding your valuable trees. Most importantly, inspect your trees periodically and establish a tree maintenance program to keep your trees healthy.

For more information contact: *Wayne Clatterbuck at 865-974-7346 or*  
[wclatterbuck@utk.edu](mailto:wclatterbuck@utk.edu)

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## Forestry Best Management Practices (BMPs) and Stream Crossings

*Wayne K. Clatterbuck, Associate Professor, Forest Management and Silviculture*

Stream crossings probably are the greatest risk to water quality during harvesting operations. Streams are the lowest point on the landscape where water drains. Roads and skid trails provide a conduit for runoff to enter the stream. With stream crossings, stream banks are often altered with the potential to slough off, soil is rutted or compacted, runoff from the road is concentrated at the crossing, and vegetation is removed, all increasing the chance of sediment entering the stream. A few general guidelines for stream crossings include:

1. Avoid crossing streams, if possible. Access the timber from the other side of the stream.
2. If streams are crossed, cross at right angles where channels are straight. Do not interfere with stream flow.
3. Approaches should climb away from streams. If possible, approaches should be graveled to provide stability and reduce erosion. Dips and turnouts should be installed to turn water off the road above the crossing. These structures will allow soil particles to fall out above streamside management zones (SMZs) and prevent them from entering streams.
4. Choose narrow places with low banks to cross the stream. Deeply cut channels and those in soft, muddy soil should be avoided.

Stream crossings should be “red flag” areas during harvest planning. Recent BMP surveys in Tennessee indicate that about two-thirds of the sampled harvest operations avoided crossing streams completely. However, most of the potential water quality threats statewide were still associated with stream crossings.

In reality, some streams must be crossed during harvesting operations, but utmost care should be taken to ensure that the crossing is not a detriment to water quality. Low water fords, portable bridges and log or pole fords are options for crossing small streams.

The streams of **low water fords** must have a solid rock or gravel bottom so that no muddy water will result from the crossing. Locate fords where stream banks are low. Logs cannot be dragged/skidded across the stream bottom according to Tennessee BMP guidelines. Dragging logs across streams can stir-up and dispense soil particles at the bottom of the stream.

**Bridges** vary in expense and design. Portable bridges that can be carried from site to site are commercially available and are excellent temporary options for narrow stream crossings. Metal grating is another alternative. Log or timber bridges can be constructed from low-grade lumber and logs from the site. However, safety and load (weight) concerns should be considered. The ability to maintain traction on the bridge surface and the safety of the bridge approach is critical when the surface is wet or frozen.

**Log or pole fords** may be used by placing a pyramid of poles in the streambed. Green or small diameter tops, limbs and brush should not be used for this purpose. The crossing surface can be improved by use of secured decking or panels. Old gas line pipes could also be used to allow the flow of water through the crossing structure. Logs, poles and pipes must be removed immediately after use to prevent clogging with debris and obstructing streamflow.

PVC (polyvinyl chloride) or HDPE (high-density polyethylene) **pipe bundles** can be used to build temporary stream crossings. Pipes are cabled together and layered like an accordion on top of geotextile fabric sets in the streambed. Operators can place wood mats, wood panels or other materials over the pipes to add stability and traction. Water flows through the pipes while vehicles travel over them. HDPE pipes are recommended over PVC pipes because they tolerate the cold better and do not need protection from sunlight. Pipe bundles can be used in areas that are less than 10 feet wide and 4 feet deep.



Do not use fill material over these temporary crossings. Wood planking, decking, mats or panels; geotextile fabric; expandable metal grates; or even pallets are acceptable alternatives. All temporary stream crossing materials should be removed from the stream channel after use.

Stream crossings should be avoided, if possible, during harvest operations. However, if stream crossings are necessary, care should be taken to ensure that sediment does not enter the stream. Using BMPs in your stream approaches and spending some time and effort in using temporary crossing structures will ensure that your stream crossing is not a water quality problem.

For more information contact: *Wayne Clatterbuck at 865-974-7346 or*  
[wclatterbuck@utk.edu](mailto:wclatterbuck@utk.edu)

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### **How to Choose a Logger**

*Wayne Clatterbuck, Associate Professor, Forest Management and Silviculture*

One of the most important steps in executing a proper timber harvest is to hire a qualified logger. How is this done? It's a four step process: (1) Interview prospective loggers, (2) Get references, (3) Follow up with references, and (4) Visit logging sites of loggers you have interviewed.

**What to ask prospective loggers?** How long have you been in business? Are you and your employees covered by workers' compensation and liability insurance? What type of road and skid trails do you construct and how will they look when the logging job is completed? Ask loggers if they have completed the Tennessee Master Loggers Course and follow Best Management Practices (BMPs)?

**Get references.** Ask for references from other forest landowners.

**Follow up with references.** Discuss with other forest landowners their experience with the logger, particularly: Did the logger fulfill his contractual obligations? Did the logger listen to and act on your concerns? Was the logger careful in leaving your remaining trees and the site in good condition? Would you hire this logger again?

**Visit sites that have been logged and are being logged by prospective loggers.** At active sites inspect the condition of logging equipment. Note whether the crew is wearing proper protective equipment including hardhats. Inspect the condition of trees that remain. Was care taken in felling not to damage the crowns of remaining trees? Was care taken in skidding not to scar the base of trees? Inspect streams and stream crossings to determine whether the logger adhered to BMPs.

For a list of Tennessee Master Loggers in your area, contact your county Extension office, your local Division of Forestry office or the following website: <http://www.tnforestry.com/loggers.html>

For more information contact: *Wayne Clatterbuck at 865-974-7346 or*  
[wclatterbuck@utk.edu](mailto:wclatterbuck@utk.edu)

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### **Clean Energy Grant**

*Adam Taylor, Assistant Professor, Wood Products Management*

The United States Department of Agriculture (USDA) is offering grants to small rural businesses to assist with projects to improve energy efficiency or make use of renewable energy sources. Grants from \$2,500 to \$500,000 will pay 25 percent of the total project cost. If you are considering an energy-related improvement at your company (e.g.) insulating a building or installing a new wood-waste boiler), you should call Adam Taylor to find out whether your project might meet the grant's requirements.

For more information contact: *Adam Taylor at 865-946-1125*  
[adamtaylor@utk.edu](mailto:adamtaylor@utk.edu)

## **Wood Chip Quality**

*Adam Taylor, Assistant Professor, Wood Products Management*

Thursday, September 8 the University of Tennessee Forest Products Center will be presenting a one-day Wood Chip Quality Workshop. The session will cover the characteristics of a high quality wood chip, why your customers care, and what you can do to ensure a high-quality product from your chipper.

For more information contact: *Adam Taylor at 865-946-1125*  
[adamtaylor@utk.edu](mailto:adamtaylor@utk.edu)

###

## **Time to Start Treating**

*Adam Taylor, Assistant Professor, Wood Products Management*

Recent outbreaks of exotic insects such as the Asian long-horned beetle and the emerald ash borer in the United States have heightened concern over the movement of pests between countries. One response has been the development of an international standard to ensure that wood packaging materials are free of harmful organisms. In 2002 the International Plant Protection Convention (IPPC) created ISPM 15, a standard covering the sterilization of wood packaging materials using heat treatment or methyl bromide fumigation.

ISPM 15 is about to be implemented by countries around the world. The European Union began enforcement of the standard on March 1, 2005. China has announced its intention to adopt the phytosanitation standard, although no date has been set.

The IPPC standard applies to hardwood pallets, and Tennessee is a major producer of wooden pallets and pallet lumber. It is too soon to tell how much the new international standards will impact the industry in Tennessee; however, it is likely that the industry will need to add lumber treatment capacity, especially as more and more goods are moved around the world in the new global economy. Not all pallets will require treatment: pallets used and produced within the United States and those exported to Canada will be exempt from the standard.

Companies seeking to provide pallets treated in accordance with ISPM 15 must be registered and inspected by authorized certification agencies. As with lumber grading, sterilized wood must display a stamp that shows it has been properly treated. The National Hardwood Lumber Association, based in Memphis, is an authorized heat treatment certification agency. The National Wooden Pallet & Container Association (NWPCA) directs methyl bromide fumigation accreditation.

For more information contact: *Adam Taylor at 865-946-1125*  
[adamtaylor@utk.edu](mailto:adamtaylor@utk.edu)

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