



# Forestry, Wildlife & Fisheries Update Newsletter

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

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### *Calendar of Events - 2002*

**October 12**

Forestry Field Day  
Hickman County

**October 19**

Forestry Field Day  
Rhea County

**November 6 -7**

Tennessee Vegetation Management Association  
Annual Meeting - Marriott Hotel  
Knoxville, TN

**November 19-20**

Freshwater Prawn (Shrimp) Conference

**Faculty:**

*Wayne Clatterbuck, Forest Management*  
*Craig Harper, Wildlife Management*  
*Thomas Hill, Fisheries Management*

*George Hopper, Natural Resources*  
*David Mercker, Forest Management*  
*Larry Tankersley, Forest Management*

### **Prawn Conference To Be Held**

*Thomas K. Hill, Professor, Fisheries Management*

Important dates to mark on your calendars are November 19-20, 2002. These dates have been reserved for the Third Freshwater Prawn (Shrimp) Conference to be held in Springfield, Tennessee. The two previous conferences were for one day at the Highland Rim Experiment Station and were attended by full-capacity crowds of about 80 people. This year's conference will be two days and will be held at the Springfield Center on Main Street where a significantly larger audience can be accommodated.

An outstanding program is being planned with relevant topics and speakers from several institutions where cutting edge prawn research is being done. This is another effort in our commitment at the University of Tennessee to provide our prawn producers with the best and most up-to-date information to help them be successful. Be on the lookout for more information on the conference in the next few weeks.

In conjunction with the conference, the U. S. Prawn and Shrimp Growers Association will hold its annual meeting. This new association was officially formed last year to facilitate the rapidly growing prawn and shrimp farmers. Mrs. Jane Corbin, a prawn producer in Robertson County, is on the board of the association.

For the first time in history, shrimp was the number one seafood consumed in the United States in 2001 replacing tuna which had been at the top of the list for many years. Currently, about 80 percent of the shrimp consumed in the U.S. are imported. Farmed shrimp represent only about 40 percent of world production so the potential for more cultured shrimp is very real.

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### **Shaping and Shearing Leyland Cypress for Christmas Trees**

*David Mercker, Extension Associate, Forest Management*

Some tree farmers in Tennessee are experimenting with Leyland Cypress for both "choose and cut" and wholesale Christmas tree markets. This species is not suitable for all locations in Tennessee and it is prone to frost damage. It is best to test small plantings first. When planted in appropriate locations, it can be a good alternative for the traditional Virginia pine.

Growers often lack the experience on shaping and shearing this species. The following are general rules to follow in order to produce Leyland Cypress Christmas trees with desirable form:

1. Do not conduct any side shearing until the third growing season (or until trees reach 4 - 4.5 feet tall).
2. During the first two growing seasons, conduct corrective pruning to eliminate double leaders or leaders with poor form.
3. Shear fairly heavily during the third growing season to develop stout branches which are less prone to bending from ornament weight.
4. In the fourth season, shear one of two ways (depending on the desired outcome). For trees with stout branches and less dense foliage, shear once in the late summer. For trees with weaker, softer but fuller foliage, shear lightly in both early summer and again in late summer/early fall. Unlike most Christmas tree species, Leyland puts a preponderance of its growth on late in the growing season when it's cooler.
5. If using mechanized shearing equipment, do not apply petroleum-based oils to the cutting edge of the equipment. These oils can cause a burnt-edge appearance to the outer foliage. Instead, use a vegetable-based oil.

Leyland Cypress has potential for short rotation Christmas trees production in some Tennessee locations. The fast growth rate make it desirable for growers and the lack of unwanted loose needles make it inviting to many homeowners.

(Reference:Mississippi State Extension Service)

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### **Fall Forests 2002**

*Larry Tankersley, Extension Assistant, Forest Management*

We will have leaf color in the coming weeks. It will be beautiful! The peak is typically when Alabama comes to Knoxville to play football this year October 26<sup>th</sup>. With out giving too much credit to the University of Alabama, a “Crimson Tide” is often just what we want when ask what makes dramatic leaf color. Reds and oranges that “catch your breath” are the results of anthocyanins in certain tree species. Leaf color prediction is great sport even when you know a little about the chemistry because weather and site determine, to a large extent, how things go.

Anthocyanin is part of the light catching apparatus of the tree. As the days grow shorter and cool more at night, chlorophyll production is reduced, with fewer nutrients and water moving to the leaves during these weeks as the tree forms an abscission layer between the twig and leaf. This saves water and will make for an clean break when the leaf detaches in the breeze.

According to one theory (the light screen hypothesis), the red pigment, i.e. anthocyanins, serve to shade the photosynthetic apparatus from excess sunlight that might otherwise inhibit “food” production. A certain amount of energy is needed to manage reabsorption of nutrients from the leaves before they detach from the tree. Anthocyanin levels actually increase. They are not present during the rest of the year at the levels they ultimately become. The amount of anthocyanin a tree will produce certainly depends on the trees genetics, but to a larger extent much is determined by the weather. The amount is also determined by the amount of sugar present in the leaf. Anthocyanin production requires sugar. As water flow through the leaf is reduced, the concentration of sugar increases and more anthocyanin is potentially produced. The amount depends on adequate exposure to light. Consider the sunny side of an apple, the red is light induced anthocyanin production.

Bright days are best for good reds and oranges, and purples. Cool but not freezing temperatures are best for degrading chlorophyll which masks all other pigments. Freezing pretty much puts an end to leaf chemistry for the year as most of the enzymes cease to function and the leave falls.

Watching leaves change color is great! It reminds me to get the house and cars ready for winter.

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**“Firewise” Homes**

*Larry Tankersley, Extension Assistant, Forest Management*

Living in the forest is great. It is cool and peaceful and defines tranquility. A blissful summer or late fall afternoon, however, can turn into a disaster in the unfortunate event of a fire. Forest owners and other persons who reside in close proximity to forest fuels should protect themselves from wildfire, by considering guidelines suggested by the Tennessee Department of Agriculture’s Forestry Division. A “Firewise” home has: **Defensible Space:** Do you have 30 feet of space surrounding your home that is **Lean, Green and Clean?**

- Lean** – Prune shrubs and cut back tree branches, especially within 15 feet of your chimney.
- Green** – Plant fire resistant vegetation that is healthy and green most of the year.
- Clean** – Remove all dead plant material from around your home: this includes dead leaves, dry grass and even stacked firewood.

Contact your Division of Forestry office and ask for a “**Firewise**” pamphlet and consider protecting your “home in the woods” from a wild forest fire.

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**T.W.R.A. Policy on Fishing**

*Thomas K. Hill, Professor, Fisheries Management*

There has been some confusion and misunderstanding regarding fishing regulations from Tennessee Wildlife Resources Agency in private ponds and lakes. I hope the following information will help clear up some of the questions.

When a landowner obtains a permit from T.W.R.A., channel catfish and rainbow trout can be sold to anglers by the pound. People who come to fish in such situations are not required to have a fishing license.

Game fish such as largemouth bass, bluegill and crappie cannot be sold either by the fish or by the pound. Pond owners with such fish are allowed to charge a privilege fee to anglers. State regulations for sizes and numbers of fish in the creel must be observed. Additionally, a valid fishing license is required for anyone who catches bass and bream and removes them from the premises. Either a state of Tennessee hunting and fishing license or a county of residence license is valid. The county license is only good in the angler’s home county and only live bait can be used with this license.

There are quite a large number of pay lakes and ponds throughout the state. There may be opportunities for many others to receive some income from their aquatic resources. Since T.W.R.A. has responsibilities for all of the game and fish in the state whether on private or public property, anyone who plans to develop fishing opportunities on private waters should get all available information from them early in the process.

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### **It is Veneer, When ...**

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

Less than five percent of the logs harvested are considered veneer logs. The very best logs are called slicer logs where the logs are sliced parallel with their length. These bring the highest prices (several to tens of dollars per board feet) and are used for highest-end products such as surfaces of fine furniture and tables. Veneer logs that are not quite as good are called rotary logs and are usually peeled on a lathe. The price for these logs is in the range of the higher quality sawlogs. Rotary logs are used primarily for panel products.

Veneer buyers are very discriminating for the logs they purchase. The best prices are paid for logs with the following characteristics.

- **Straight.** The logs must be straight; the yield from crooked veneer logs is poor.
- **Round.** Out-of-round logs give poor yields of veneer and there are potential internal problems such as reaction wood and variations in color. Reaction wood is a name given to wood which is formed in leaning trees that cause different wood properties, primarily wood cell shrinkage during drying, when compared to other wood cells.
- **Centered Pith.** Also important for yield, an off-center pith indicates the presence of reaction wood.
- **Uniform Growth Rate and Color.** Variations in diameter growth can stand out on a sheet of veneer. Dramatic changes in ring width over the life of a tree yield less-desirable veneer than more uniform ring widths. Also, undesirable changes in wood color often accompany significant changes in growth rate.
- **No Indications of Defects on the Surface of the Log.** Slight irregularities in the bark can indicate deep, overgrown branch stubs or other defects.
- **A Large or Small Heart, Depending on Species.** Species where the sapwood is prized, such as maple, ash and birch, need to have a small heart. Conversely, where the heartwood is prized, such as cherry, oaks and walnut, need to have only a small edge of sapwood.
- **No Indications of Mineral Deposits, Worm Tracks, Gum Deposits or Bird Peck.** Different species tend to have different potential for defects. Most buyers prefer to look at the ends of the logs to see if there are any other potential defects.

The above list does not include log diameters or log length. Large diameter logs are usually worth more than smaller logs. However, veneer logs do not have to be very large to be worth a lot of money. Some highly valued species, such as walnut and sugar maple, at smaller diameters (12 and 14 inches), will bring twice as much as veneer than sawlogs. Still, the volume return is not as great for smaller logs than larger ones. Log length is another factor. High-value veneer logs are sold in one-foot intervals from 8 to 16 feet long with 10 feet and above being the most valuable. The bucking lengths or the length of log cuts from a tree is crucial in getting the highest veneer value.

Some of the largest suppliers of veneer logs are sawmills. Most sawmills set aside the potential veneer logs that come in and have a veneer buyer come by on a regular basis to look them over. The sawmill buys these logs as top-quality sawlogs. By selling them as veneer logs, a tidy profit is made; much more than could be made by processing them into lumber. Landowners (sellers) should be aware of the veneer logs in their overall timber sale to make sure that they receive the best price for their timber.

One of the most frustrating aspects of selling veneer logs is the seeming subjectivity of the quality, thus the value of veneer logs. The realization that one aspect of a log buyer's job is to get an adequate supply of desirable logs as cheaply as possible. The other side is the buyer's reputation to make sure that sellers are

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treated fairly and that they will be able to buy logs in the future. Knowledge is your best ally when it comes to be treated fairly. By learning what the veneer buyers are looking for, making a good evaluation of your logs and knowing the going rates for different species, you can be assured that you are being paid full scale for your logs. Invite competition for your logs by getting quotes from several buyers. Keeping up on the markets and options is the best way to get full value for your most valuable logs.

*Adapted from: Sawmill & Woodlot, Aug/Sept 2002*

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### **Sources of Reproduction**

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

Trees regenerate in several ways: seeds, sprouts and advance reproduction, that is, small seedlings that are already in place ready to grow when released from overstory trees. Most hardwoods regenerate readily from stump sprouts because their already intact and large root system gives them a growth advantage over seeds that must develop that root system. Some species grow readily from dormant buds on roots or root sprouts (locust and sweetgum). Others have the capability of growing quickly from seed (poplar and pine). The table below outlines the relative importance of the reproduction source in relation to the species regeneration potential. The shade tolerance of the species is also given because some species are more adapted to growing in full sunlight as opposed to the shade. Knowing the regeneration source, regeneration potential and shade tolerance of the species will assist you in predicting and evaluating the future regeneration of a harvested stand.

*Note: Please see table on following page.*

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Table 1. - - - Sources of reproduction and shade tolerance of some species in hardwood forests.

Species	Relative importance of reproduction source in relation to species regeneration potential <sup>a</sup>					Shade Tolerance
	Seed from current seed crop	Seed stored in forest floor	Advance reproduction <sup>b</sup>	Stump sprouts <sup>c</sup>	Root sprouts (suckers) from cut trees	
<b>Hardwoods</b>						
American basswood			1	1	2	tolerant
American beech			1	3	2	very tolerant
American elm			1	3	2	intermediate
American holly		1	2	2		very tolerant
American hornbeam			1	2		very tolerant
Bigtooth aspen	2		3	3	1	very intolerant
Black cherry		1	2	2		intolerant
Blackgum			1	2		tolerant
Black locust		2			1	very intolerant
Black walnut	1		1	2		intolerant
Black willow	1			2	2	very intolerant
Boxelder	2		1	1		tolerant
Buckeye	1	1	2	2		tolerant
Butternut			1	2		intolerant
Cucumbertree		1	2	2		intermediate
Eastern cottonwood	1			1	3	very intolerant
Eastern hophornbeam		2	1	1		tolerant
Eastern redbud			1	2		very tolerant
Flowering dogwood		1	1	2		intermediate
Green ash			1	3		intermediate
Hackberry			1	3		intermediate
Hickories <sup>d</sup>			1	3		intermediate
Oaks <sup>e</sup>			1	2		intermediate
Persimmon		2	1	1	2	very tolerant
Quaking aspen	2		3	3	1	very intolerant
Red maple			1	2		tolerant
River birch	1		2	2		intolerant
Sassafras			1	2	1	intolerant
Silver maple			1	2		tolerant
Slippery elm			1	3	2	tolerant
Sourwood		2	1	1		tolerant
Sugar maple			1	2		very tolerant
Sweetgum	1			1	1	intolerant
Sycamore	1		2	2		intolerant
White ash		1	1	2		intermediate
Yellow birch	1		2			intermediate
Yellow-poplar		1	2	2		intolerant

**Relative importance of reproduction source in  
relation to species regeneration potential <sup>a</sup>**

Species	Seed from current seed crop	Seed stored in forest floor	Advance reproduction <sup>b</sup>	Stump sprouts <sup>c</sup>	Root sprouts (suckers) from cut trees	Shade Tolerance
<b>Conifers</b>						
Baldcypress		1	1	2		intermediate
Eastern hemlock			1			very tolerant
Eastern redcedar	1		1			intolerant
Eastern white pine	1		1			intermediate
Loblolly pine	1		1			intolerant
Pitch pine	1		1	2		intolerant
Shortleaf pine	1		1	3		intolerant
Virginia pine	1		1			intolerant

<sup>a</sup> 1 = primary source; 2 = potentially significant but not primary source; 3 = minor source. Relative importance of reproduction source is for sawtimber-size stands.

<sup>b</sup> Includes seedlings, seedling-sprouts, and in a few species root sprouts (i.e., species occurring in root sprouts column).

<sup>c</sup> Sprouts originating from stumps of trees  $\geq$  2 inches d.b.h.

<sup>d</sup> Hickories as a genus are mostly intermediate in shade tolerance. Mockernut and bitternut range more toward intolerant

<sup>e</sup> Oaks as a genus are mostly intermediate in shade tolerance. Red oaks range more toward the intolerant scale.

**Sources:**

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USDA Forest Service, Washington, DC.

8/25/2000

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### **Increased Awareness of Bat Rabies**

*Craig Harper, Assistant Professor, Wildlife Management*

There has been increased awareness of rabies associated with bats since at least two people have contracted the disease in recent weeks, including the death of a 13-year-old boy. Although outbreaks occasionally bloom within given areas, bats typically rank third (behind raccoons and skunks) in incidence of wildlife rabies in the US. Rabies is treatable if treatment occurs before symptoms arise; if not, rabies is fatal. If bitten, the animal should be collected if at all possible to confirm it has rabies. The person bitten should begin to receive treatment immediately, even if symptoms are not noticed within a few days. If infected, it may take weeks before symptoms arise, causing the person to believe, initially, that they were not infected.

Sometimes a person may not realize a bat has bitten them. This is a real concern if a bat is found in the room where someone has been sleeping or in an infant's room. Bats have very small teeth. Because the bite is slight, some people think it is not serious. In these situations, the bat should be killed, without damaging the brain, by an animal control officer and submitted to a diagnostic laboratory.

In general, the best prevention is to NEVER handle a bat! Bats are active, nocturnal animals. If one is seen on the ground (especially in the daytime, but even at night), there is something wrong with it. If a bat is found on the ground, it should be reported to an animal control officer or the health department. Likewise, if a raccoon, skunk, or fox is seen acting abnormal—easily approachable, aggressive, seen in the daytime acting lethargic—it should be reported also.

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### **West Nile Virus Should Pose No Threat To Hunters**

*Craig Harper, Assistant Professor, Wildlife Management*

The spread of West Nile Virus (WNV) has sparked tremendous concern and interest among the public, including hunters. WNV has been found in many game birds species, including Canada geese, mallard ducks, wild turkeys, ruffed grouse, ring-necked pheasants, and mourning doves. As a result, many hunters are worried about the potential of contracting WNV from wild game meat.

Information from the National Wildlife Health Center in Madison, WI says that heat and light can be used to destroy the virus and that **it is perfectly OK to eat cooked wild meat**. Hunters, however, should wear rubber gloves when dressing game and take care to prevent bone punctures and protect open cuts on hands and arms.

The probability of a hunter killing an infected bird is extremely low. Birds killed while hunting normally represent the healthiest in the population, while sick individuals usually isolate themselves. If a hunter is exposed to the virus, most likely from a mosquito bite, chances are no symptoms will be experienced. Only about one in every 200 people infected actually get sick. Some who have contracted the virus may think they are experiencing a mild case of the flu or an allergy attack.

Although relatively little is known at this time, WNV is not expected to have a detrimental effect on most wildlife species. While crows, jays, and raptors have exhibited the highest rate of mortality, domestic chickens that have tested positive for WNV have appeared to be unaffected. Hopefully, wild turkeys, quail, and pheasants will show the same resistance.

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