



Forestry, Wildlife & Fisheries Update Newsletter

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

May 2002
Website: <http://fwf.ag.utk.edu>

In This Issue:

Find a Licensed Arborist	Page 2
Exploring Threats to Private Forests	Page 2
U.N. Treaty Passes New Regulation Requirements for Hardwood Pallets	Page 3
The Dynamics of High Grading	Page 3
Grass Carp for Weed Control	Page 4
Checking Fish Population Balance in Farm Ponds	Page 4
Reforestation of Beetle-Killed Stands	Page 4
Protecting Your Garden from Nuisance Animals	Page 6
36,000 Gallons of Wood per Second	Page 7
4-H Forestry Update for Contest	Page 7

Calendar of Events - 2002

May 15 - June 15

4-H'ers plant FACE Food Plots

May 23

Master Logger - Crossville

June 3 - 7

Tennessee 4-H Jr. High Wildlife Conference

June 8

Tennessee Chapter of The Wildlife Society Annual Meeting
Cumberland Mountain State Park

June 13

Master Logger - Wartburg
State Forestry & Wildlife Judging Contest

June 23 - 25

Master Logger - Clarksville

August 7

Inservice Training for Establishing & Managing Native Warm Season
Grasses for Wildlife - Smoky Mountain District

August 8

Inservice Training for Establishing & Managing Native Warm Season
Grasses for Wildlife - Central District

Find a Licensed Arborist

David Mercker, Associate Extension Forester, Forest Management

Whether it be to appraise a prized landscape tree, apply insecticide to the crowns of tall trees or professional pruning, you can quickly locate a licensed arborist by searching the International Society of Arborists website. Go to this website and type in your zip code and likely several professionals will be listed: <http://www.isa-arbor.com/arborists/arbsearch.html>. Members of this organization have to pass rigorous testing, maintain continuous education and adhere to ethical standards.

For more information contact: *David Mercker at (731) 425-4717*
dcmercker@ext1.ag.utk.edu

###

Exploring Threats to Private Forests

Brian Bond, Assistant Professor, Forest Products

Over the past decade in the United States, we have seen increased pressures on privately owned forests to produce wood products, a result of limitations on the harvesting of publically owned forests. This has created higher prices for timber and logs, spurring some increased forest management and tree planting. These are generally viewed to be good.

Still, threats to privately owned forests exist. It is commonly accepted by most in the forestry sector that forest degradation, parcelization and conversion are a serious concern to the long-term functionality of our nations nonindustrial privately owned forests.

Degradation implies a lowering in quality of goods, services or functionality. Forest degradation results from decades of misuse or even abuse, such as: improper/uncontrolled harvesting, livestock pasturing of forests, erosion and compaction of forest soils or uncontrolled fires. Fortunately, through sound, scientific forest management, these mistakes of the past can be overcome.

Parcelization of forests is the dividing of larger ownerships into smaller ones, each with a different owner and each having different objectives. For instance, an original 500 acre ownership managed exclusively for timber and wildlife becomes 5 one hundred acre ownerships. Each of these in turn becomes 5 twenty acre ownerships ... leading to 25 owners. Sustained management of forests for timber production on tracts 20 acres in size and smaller is difficult, particularly when homes, driveways, utilities and outbuildings are inserted.

Conversion of private forests is gradual. It usually occurs when the value of the property as forest can no longer compete with its value as some other use, whether that is residential, agriculture or other development (Best and Wayburn, 2001). Sometimes known as urban sprawl, forest conversion is most prevalent near or adjacent to urban centers. Once the forest is cleared, the land no longer serves as efficiently for the protection of soil from erosion nor the gradual recharge of ground water. In addition, wildlife habitat is dramatically altered.

To adequately address these problems, increased collaboration between public, private and foundational interests is needed. And too, society must be made aware of how, if left unchecked, these problems could ultimately affect quality of life.

For more information contact: *Brian Bond at (865) 946-1121*
bbond7@utk.edu

New Regulation Requirements for Hardwood Pallets

Brian Bond, Assistant Professor, Forest Products

The International Plant Protection Convention, a United Nations treaty governing 118 participating nations, passed a regulation requiring that all wood used in pallets must be heat treated to destroy insects and other fungal threats. The IPPC now binds all participating countries to a minimum set of standards for international shipments of wood packaging materials.

There is no identified time line for implementation of the new standards, but it is likely that customers will begin requiring pallets used overseas to be treated. The new IPPC Approved Pest Treatment Standards require that wood packaging material be heated so that a minimum core temperature of 56°C for a minimum of 30 minutes is achieved. The method of heat treatment must be certified through an authorized certification agency. The American Lumber Standard Committee is administering the authorization program.

The Tennessee Forest Products Center at the University of Tennessee has conducted pilot tests on various methods to heat treat pallets. The FPC will also be holding three information sessions across the state, regarding the new pallet sterilization requirements. Information about the times and location of these sessions will be available soon. For more information, please contact Dr. Brian Bond at 865-946-1121.

For more information contact: *Brian Bond at (865) 946-1121*
bbond7@utk.edu

###

The Dynamics of High-Grading

Wayne Clatterbuck, Associate Professor, Forest Management

Concern exists among forest practitioners, owners, industry and the public that high-grading --- the practice of harvesting those trees that will give the highest intermediate economic return --- may lead to a widespread decline in forest resource quality. Two practices, diameter-limit cutting and selective cutting, fall in this category. In diameter-limit cutting, all saleable trees above a certain diameter are harvested. Selective cutting usually removes the largest, most valuable trees and may leave large-diameter, poor-quality, low-value trees. In each case, most of the trees that remain after the harvest are the inferior, defective trees. Neither method gives any thought to the composition of the future forest.

In most forests in Tennessee, smaller-diameter trees are not necessarily younger trees. Most of these smaller trees are either (1) slow-growing species of the same age as different, fast-growing species or (2) the same species of the same age, but did not grow as quickly as their larger-diameter counterparts due to greater competition between trees.

Because slower-growing and poor-quality trees are retained, high-grading diminishes the diversity and economic value of the future forest. Landowners may agree to high-grading because of a lack of knowledge about the practice and its undesirable consequences. High-grading can also be driven by short-term economic considerations. Immediate cash flow may be higher with high-grading, but potential environmental degradation and decreased future timber values will more than cancel the immediate cash advantage.

Stewardship requires that landowners consider the future consequences of high-grading when making a decision whether or not to accept the use of the practice on their land. Resource professionals and harvesters also have an obligation to look beyond the present when recommending forest management practices to landowners.

Adapted From: *Best Management Practices for Pennsylvania Forests*

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

Grass Carp for Weed Control in Ponds

Tom Hill, Professor, Fisheries Management

Stocking Chinese grass carp, sometimes called *white amur*, in farm ponds is an effective way to control aquatic weeds and filamentous algae. Grass carp are almost exclusively plant eaters, so reliance on herbicides is greatly reduced.

Depending on the amounts and types of aquatic weeds to be controlled, stocking rates of 5 up to 100 per acre are recommended. The lower rate is advisable unless the weed problem is extremely heavy. In smaller ponds where some of the grass carp can be recovered once the weeds are under control, a higher rate of 75 to 100 per acre can be stocked. In ponds where largemouth bass are already established, grass carp stockers should be 9 to 10 inches long or they will be eaten. Smaller grass carp can be stocked where predator fish are absent.

Once grass carp are very large (30-35 pounds), they are not very efficient at eating aquatic weeds. Catch the large ones and eat them as they are very good. Replace the harvested grass carp with 9 to 10 inch stockers.

For more information contact: *Thomas K. Hill at (865) 974-7346*
tkhill@utk.edu

###

Checking Fish Population Balance in Farm Ponds

Tom Hill, Professor, Fish Management

In order to maintain balanced fish populations in farm ponds, it is important to know the structure of the populations. There are two basic ways to do this, fishing and seining.

Where a desirable population is present in a pond, many bluegill 6 inches and larger will be caught. Many different sizes of largemouth bass in good condition with an average weight between 1 and 2 pounds will be taken. If most of the bluegill caught are 3 to 5 inches and thin and the few bass caught are large and in good condition, the pond is overcrowded with bluegill.

A pond with a balanced population when seined with a 15 foot minnow seine during the summer will have an average of two young-of-year bass and recent bluegill reproduction. A few intermediate bluegill will likely be caught, also. No young bass and no bluegill reproduction indicate an unbalanced fish population. This balance check method is quite effective, but is only useful after both bass and bluegill have already spawned.

For more information contact: *Thomas K. Hill at (865) 974-7346*
tkhill@utk.edu

###

Reforestation of Beetle-Killed Stands

Larry Tankersley, Extension Assistant, Forest Management

At the urging of the state forester, the Tennessee Forestry Association and a variety of other interests, Senator Frist has secured \$4 million for cost sharing in the reforestation of beetle-killed acres. Protocols are being worked out for dispensing these funds as we speak. Forest stewards should be planning the future for these acres in the meantime.

As we have said before, your forest stewardship plan likely mentioned future replacement of these trees. If

that is the case, beetles have hastened implementation of these plans. You just need to do what was suggested at the time.

If you do not have a forest stewardship plan, you will need to consider the future for these acres. Whether they will become a forest of a different type, perhaps yellow-poplar with some mixed oaks or more likely sweetgum and red maple (note: sweetgum and red maple seedling are more tolerant of shade than the other two species mentioned). In most situations there is advanced regeneration, i.e., trees that are volunteering to grow on the ground liberated from the pine's shade. The next stand of trees may already be in place. You should, however, try to anticipate the natural succession that will likely take place as you consider your options for these acres.

What are your goals for these acres? Watershed protection may have been the origin of the pine stands, as many acres were planted 40-60 years ago to prevent soil erosion. These acres would be considered marginal for plantings of oak, walnut or yellow-poplar today.

Do you have expectations of timber income from these acres at some point in the future? This question bears on level of activity required on your part. Do you: 1) carry the natural succession forward as is, 2) manipulate the existing vegetation to encourage the "more desirable" species, 3) work toward supplemental planting of desirable species or 4) eliminate the existing "brush" and establish a pine plantation? Each of these options has ecological and economic pros and cons.

There's another wrinkle, especially if you were unable, as many were, to salvage the dying and/or dead trees. These trees will ultimately come down. This will happen faster in some areas than in others, but it can take up to four or five years for some of the standing pines to finally fall. The small twigs will fall first, followed by the larger branches and finally the trunk will either break in two at some height and/or the entire trunk will fail at ground line. This progression will occur over the course of up to 4-5 years.

Laying the stems on the ground would prevent them from ultimately falling on a designated "crotree," but it would also create quite a mess, increase the fire hazard and decrease accessibility for planting crews, unless provisions were made to move the stems into windrows or piles and/or burn the material. These operations are industry standards and produce a lot of wood quickly with opportunities to control the genetics and stocking of the plantation. While these operations are profitable, they do require a fair amount of money on the front end of the investment.

A lower-cost method might be a prescribed fire this fall to open the area for planting. Use a wide spacing, 10' x 10' or wider (15' x 15'), or 300 to 500 trees per acre, and chemically release these trees at some time in the first few years of their growth. The resulting stand will lose some trees as the dead pines come apart, and the stand will be a safety hazard during these years as well, especially during planting and release operations (**do not work on windy days**). The resulting pine-hardwood mixture would suit a variety of purposes, i.e., wildlife and aesthetics, with some reduction in income generated from timber sales. Pine-hardwood mixtures also limit losses from Southern pine beetle.

Why would you want to plant pine? First, pine is generally more valuable on the timber market than sweetgum or red maple. Second, most of these sites were originally planted to eliminate soil erosion occurring at that time. It is not likely that the sites have been "built up" enough by the 40-60 or more years of pine occupation to support demanding species like walnut, oak or yellow-poplar. Pine grow much better on these marginal sites. Third is ease of planting and seedling costs. Pines are cheaper and easier to plant.

What about risk from Southern pine beetle? When asked about the probability of attack, UT forester Steve Knowe responded that in his opinion, and I agree, over the course of 60-80 years there is a 100 percent chance that you will have to deal with SPB. They are a native pest and always out there. The difference will always be our skills as stewards to capture the value of these trees before losses to SPB. Over the same 60-80 year period, your chances of southern pine beetle in any given year are less than 0.1 percent. Consider that most of the trees

killed in the past few years were 60 years old. We can document at least five southern pine beetle epidemics that did not affect these trees until now. Savvy pine managers in the future will harvest their trees before the bugs get them.

Page 6

Reforestation of beetle-killed stands will require a commitment to see the job done. This commitment may or may not include cash expenditures. Extension publication number PB1466, *Tree Crops on Marginal Farmland - Loblolly Pine*, can give you some idea of how you should appraise your expenditures. In general, rates or return on the dollar is influenced by the strength of your markets, the quality of your site and the amount of money you spend. Interest rates and future markets are also important, as is “the right thing to do” regardless of the amount of money.

Let us know if we can help you sort out your options for these acres.

For more information contact: *Larry Tankersley at 865-974-7346*
latankersley@utk.edu

###

Protecting Your Garden from Nuisance Animals

Craig Harper, Assistant Professor, Wildlife Management

It's that time of year when gardeners are busy planning and planting their gardens. As young plants begin to emerge, several wildlife species become nuisance for gardeners. Sweet corn, beans, peas, lettuce, carrots and others are relished by raccoons, deer, groundhogs and/or rabbits. There are several options to guard your vegetables from these ravaging beasts!

The most effective methods in keeping these animals out of your garden is fencing. Small gardens do not require a lot of fencing material, making this method quiet efficient, especially since the materials can be used year after year. Two-strand electric fences (one strand 6 inches above ground and the other 12 inches above ground) are very effective in keeping raccoons out of sweet corn and groundhogs out of leafy vegetables. A chicken-wire fence 2 feet high with the bottom tight to the ground will keep rabbits out of vegetable patches. For deer, try a one-strand electric fence (2+ 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 their nose and-or mouth to the tabs, they learn to stay away from the area.

Where legal, and when permits are issued, shooting is an extremely effective method in dealing with nuisance animals in the garden. Raccoons, groundhogs and rabbits can be trapped using a variety of traps. Cage (live) traps usually are effective in trapping these animals. Baits may include the plant(s) that are being damaged, or sardines for raccoons, fruits and melons for groundhogs, and fruits and leafy greens for rabbits. Trapping is most effective when used in conjunction with fencing.

When offending animals are not very numerous, a patch of ladino white and red clover grown near the garden will lessen browsing pressure on garden vegetables by groundhogs, rabbits and deer. Although short-lived and less effective, many taste and area repellents are available for deer and rabbits. Deer Away® and Deer Stopper® have been found effective when applied to a cotton rope strung around the garden approximately 2 feet off the ground. There are no toxicants registered for deer, raccoons, groundhogs or rabbits. If unwanted wildlife are frequenting your home or garden, request Extension publication PB1624 *Managing Nuisance Animals and Associated Damage Around the Home* for more information.

For more information contact: *Craig Harper at (865) 974-7346*
caharper@utk.edu

###

36,000 “Gallons” of Wood Per Second

David Mercker, Associate Extension Forester, Forest Management

Presently the world’s population stands near 6.2 billion. On average, whether for lumber, paper, furniture, handles, fuel or caskets, these inhabitants will use approximately ½ gallon of wood per day. That’s about 36,000 gallons *per second*. Put in perspective, the average backyard swimming pool holds 27,000 gallons of water.

Let this be evidence of the importance private forest landowners are for the production of our renewable wood resource.

Reference: *The Evergreen Foundation*

For more information contact: *David Mercker at (731) 425-4717*
dcmercker@ext1.ag.utk.edu

###

4-H Forestry Update

Larry Tankersley, Extension Assistant, Forest Management

Site evaluation for the first time.

I am very excited about our new event at this year’s State 4-H Forestry Contest. The Site Evaluation event will be for 100 points and is a **team** event. This means that the contestants are encouraged to discuss their responses and apply their collective thinking to the exercise.

This year we will use the sample scenario on page 24 of the “... 4-H Forestry rules”, the Senses.

In reading the study guide you will notice in the discussion of **Slope percent** (page 19) reference to instruments for measuring slope specifically an Abney level or a clinometer. Neither of these instruments is mandatory. At the contest the contestants will be given measurements for **rise** and **run**. They should be able to apply the formula shown in figure 7 also on page 19. Note the vertical height AC is six feet.

Soil depth is also given to the contestants at the site as it would be difficult for the students to dig a pit in the time allowed.

Aspect determination does require the student to take the necessary compass reading and a compass will be provided. Contestants are encouraged however to bring a their own compass.

Aspect as well as **Slope position** require the students to have some concept of “landscape” level scale beyond the limited microsite that they are stand on.

The contest site will be a quarter acre plot with the boundaries designated with plastic flagging. The contestants

should make their decisions based on observations within the plot. Trees will be designated for Section 3 and Price information will be provided. Per acre volumes and values should be the total volumes and values of the five trees expanded by the quarter acre plot size.

Page 8

Contestants will also be expected to know **all** the trees on the “Official Tree List” page 4. The Official Lists of Insects, Diseases and Woods are the same as at the district contests.

I would like to start the contest as soon after 1 PM CST as possible. No later than 1:30. We will conduct the usual events and then move as a group to the “Site Evaluation” event, which should last about 45 minutes. Scores will then be calculated and awards presented at the evening banquet. Jill Martz in the State 4-H office is making arrangements for lodging, the banquet and associated meals. For assistance in general logistics please contact Jill. For help with the contest let me know. I will be out the last week of this month and the first week in June, but I will respond to your questions as best I can hopefully on Fridays on either of these weeks.

Have fun! And good luck to all involved!!

For more information contact: *Larry Tankersley at 865-974-7346*
latankersley@utk.edu

###