



FWF Update Newsletter

Department of Forestry, Wildlife and Fisheries

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Foresters for the Future

David Mercker, Extension Specialist II, Forestry

Tennessee owes much of its identity to trees. Our land, with its rolling hills, striking mountains, and impervious swamps, is well suited for the growth of trees. It's what we do in Tennessee; we grow trees, harvest and convert them into products, then we grow more. We have done this for centuries and because trees are remarkably renewable, we'll continue doing it.

Over one-half (53 percent) of our landscape is covered with trees. That's even more -much more - than covered the state in 1900. It was in that year that the Society of American Foresters formed, birthing the new profession of *forestry*. Since then approximately five million acres of highly erodible farm and pasture land have been restored to forest in Tennessee, bringing the state-wide forest total to 13.9 million acres. Many of these new forests have been harvested numerous times and are still growing *trees for tomorrow*.

Through efforts of professional foresters, harmful forest practices have been reduced or eliminated. Forest health has been improved by controlling fires, fencing out livestock, eliminating non-native exotic plants, deadening culls, thinning to encourage more rapid growth, and administering timber harvests in ways that encourages forest renewal. Foresters are required to obtain continued education in a range of subjects, including: soil and water protection, wildlife management, ethics and more.

While traditional uses of the forest continue, future demands on the forest will increase. The role and focus of foresters will change too as the 21st century may bring innovative and exciting opportunities. Three of the most prominent are: (1) Forest Certification, (2) wood as a source of energy, and (3) forests as a sink for carbon. With the first, wood markets are developing for lumber that originates from forests that have been certified as being sustainably managed. Foresters will be heavily involved in both managing certified forests and in auditing them. With the second, foresters must become expert in growing short-rotation trees to produce fuel for electricity and even automobiles. With the third, as part of mitigating global warming, forest landowners could be paid by outside sources to sequester (or absorb) carbon. Foresters will participate by auditing the amount of carbon forests sequester from the atmosphere.

For Tennessee, trees are the answer, not the problem. A large portion of commerce activity in Tennessee centers on forests and the forest products industry. Within the state, this industry directly and indirectly employs 184,300 people and has a total annual economic contribution of \$21.8 billion. It will be vital to continue supporting such an important and sizable industry. Foresters will be key in this process and will focus on techniques for planting, growing, marketing, harvesting and processing trees. All this will ensure that the "T" in Tennessee continues to stand for "trees." For a list of professional foresters operating in Tennessee, contact your local County Extension Office or the Tennessee Division of Forestry.

Best Management Practices (BMPs) Implementation in Tennessee

Wayne K. Clatterbuck, Professor, Forest Management and Silviculture

Best Management Practices (BMPs) are guidelines that are used to reduce soil erosion and water pollution from forestry activities including road construction and maintenance, timber harvesting, site preparation, tree planting and herbicide use. Foresters, landowners, loggers, and timber contractors all have the responsibility that BMPs are implemented during forestry activities. The landowner is the one ultimately responsible for the use of BMPs on their land. Through a written forest management plan and a timber sales contract, the landowner can make sure that BMPs are implemented.

A survey of forestry BMPs implementation was conducted in 2006 and 2007 by the Tennessee Dept. of Agriculture, Division of Forestry in cooperation with the University of Tennessee, Department of Forestry, Wildlife & Fisheries. A random sample of 208 harvest sites was distributed among 5 regions based on the amount of timber harvested in each region. Harvest sites were visited and evaluated for specific BMPs under 7 categories: haul roads, skid trails, log decks, streamside management zones (SMZs) stream crossings, debris and hazardous materials and, site preparation and planting.

Overall BMP implementation for the 2007 survey was 89 percent, representing an improvement of 7 percentage points as compared to the 82 percent implementation rate reported in the 2004 survey. When compared to the 1996 survey, the 2007 survey was a 26 percentage point improvement over the 63 percent implementation rate reported in 1996. These improvements can be attributed to greater awareness of water quality issues associated with forest practices and improved understanding of correct BMP implementation. Educational activities such as the Master Logger Program have been instrumental for operators and practitioners to understand why BMPs are necessary and how BMPs are implemented correctly to protect water quality during forestry operations.

For more information at the BMP implementation survey report for Tennessee, access the following website http://www.tennessee.gov/agriculture/publications/forestry/BMP_booklet.pdf

Use of Glyphosate Products

Wayne K. Clatterbuck, Professor, Forest Management and Silviculture

The following suggestions were developed to assist foresters and other natural resource professionals in evaluating labels of glyphosate herbicides (often referred to by the common name Roundup®) and providing a legal and effective recommendation to landowners. Glyphosate products marketed by firms other than Monsanto, coupled with the repackaging of Roundup®, has resulted in a large number of glyphosate products on the market with chemical formulations and labels changing often and rapidly. The confusion with labeling has often caused incorrect recommendations (off label and illegal use) of glyphosate products.

A few years ago all glyphosate products had acid equivalent (ae) concentrations of about 360 g/L, but now products have ae concentrations of 360, 450, 480, 500 and 540 g ae/L. Because of these ae concentrations, volumetric applications rates are no longer standard for all products. Care must be taken to ensure that products are applied at the proper rate for the intended results. Except for these ae concentrations differences, many of the glyphosate products are similar (usually the surfactant and the amount of water differs). Each glyphosate herbicide has a unique label that defines how the product can be used and what results can be expected when the product is applied according to the label.

Glyphosate is used in a wide variety of crops. Glyphosate disrupts a plant enzyme involved in the production of amino acids that are essential to plant growth. However, what glyphosate product is used is based on the landscape where the operation occurs. Presently, only one brand, Accord[®], is labeled for use in regenerating or intact forests. However, a number of brands can be used for tree planting in agricultural lands.

The Environmental Protection Agency (EPA) views the release of herbicides in forest environments to be fundamentally different from their use in agriculture where natural ecosystems have been seriously disturbed. The limited demand for forest-based herbicides (compared to agriculture, turf, industrial or ornamental areas) has resulted in many companies abandoning the labeling requirements needed for authorizing the use of a chemical for application in forested areas to favor more lucrative labels for other uses. A number of glyphosate formulations can be used in site preparation treatments prior to tree planting in previously cropped or general noncrop area (excluding forests). For example, Roundup Pro can be used in tree plantings in fields, but not for silvicultural treatments in forests.

Accord[®] is the only glyphosate product that can be used in forest environments for site preparation, release, thinning and improvement work such as removing invasive plants from forests. The label states: “For control of annual and perennial weeds and woody plants in noncrop areas and industrial sites, forests, habitat management areas, railroads, roadsides and similar sites.” Common forestry uses to control undesirable vegetation are injections, cut-stump, and hack and squirt.

Many glyphosate formulations can be used in crop field that are fallow and in grass fields for the pre-plant removal or burn-down of grass and weeds prior to planting and for directed and spot spraying after planting. The label is for non-crop areas, but does not include forests as a non-crop area. The label states: “Tree, vine and shrub crops: Preplant (site preparation) broadcast sprays, general weed control, middles, strips, selective equipment, directed sprays, spot treatment, perennial grass suppression, cut stump” ...and... “Non-food tree crops – this product may be used as a post-direct spray or spot treatment around established poplar, eucalyptus, Christmas trees and other non-food tree crops.”

Remember to read and follow label directions before an herbicide is used, mixed, stored or disposed. According to laws regulating herbicides, they must be used only as directed by the label.

Is it Really That Bad? High-Grading Continued

Larry Tankersley, Extension Forester

(taken from “*Forest Stand Dynamics*”, Chad Oliver and Bruce Larson)

Selection harvesting in mixed-species stands, straighter stems and trees of economically valuable species (usually rapidly growing, relatively shade-intolerant species) in these mixed stands are harvested. The residual stands contain unvigorous, crooked, and otherwise deformed overstory trees which suppress any regeneration, so that neither overstory nor understory trees grow rapidly. This harvest pattern is known as “high-grading”.

Many stands have been entered at intervals of 10-40 years and merchantable stems have been removed each entry. There was merchantable timber each time, not because the residual trees had grown vigorously, but because the species and sizes of the trees considered merchantable had changed. First the valuable, typically intolerant hardwoods and conifers were removed, successive harvests then removed associated mid-tolerant species, and finally even smaller diameter tolerant species were removed. The result of these cuttings was to create unusual forest of crooked, often diseased trees with little future timber value.

The original forests were single-cohort, mixed species, stratified stands (chap 9), or as multi-cohort stands with many strata. Cutting patterns first removed the emergent trees and the dominant and codominant trees –those with the largest stems– in the upper stratum. Later, dominant trees from the former lower strata were removed. The cuttings released unvigorous, intermediate, and suppressed trees in each stratum and broke or scarred many of them.

These trees did not grow rapidly after each logging episode. Mostly they simply survived. Other taller but slowly growing trees shaded and suppressed lower strata. Most of the developing trees were scarred and developed as hollow trees and many grew large branches and crooked or forked stems. Fire exclusion from many of these stands also allowed different species mixes to develop.

Cutting practices and fire exclusion have allowed new cohorts of trees to enter the growing space and become suppressed by the overstory. New cohorts readily grew in dense patches from seeds of overstory trees and from sprouts and advance regeneration. The overstory shade favored survival of more-tolerant species. Many eastern hardwood stands have changed in species composition from intolerant tulip-poplars and oaks to tolerant hickories, maples, and beeches as the intolerant upper-strata trees were removed and tolerant species dominated the ensuing younger cohorts. These younger trees under the shade of the residual overstory often “spread out” to capture sunlight rather than developing into straight single stem trees.

The eventual fate of these partial cuts are unknown. In the short run, the overstory trees will grow slowly and will suppress the understory. This suppressed understory however, competes with the overstory for moisture and growing space at times allowing insects and diseases to build up.

How bad is it? What do ya’ll think?

Reusing Old Wood

Adam Taylor, Assistant Professor, Forest Products

The wood used for building houses and barns can last practically forever – longer than the life of the building itself in many cases. Much of the wood in abandoned structures is still structurally sound and can be reused. In fact many people are willing to pay extra to get old wood because it can have a special appearance and an interesting story associated with it.

If wood is kept dry it will not rot, and is much less likely to get attacked by termites or other insects. When an old barn or other wooden building fails, often only parts of the structure are damaged – for example parts of the roof or the foundation. Other pieces of wood may be discolored but still structurally sound. *Weathering* refers to the darkening and erosion of wood surfaces that are exposed to sunlight, wind and rain. While weathering can rapidly and dramatically change the appearance of lumber, it does little to affect the structural integrity of the wood underneath the surface. Weathering by itself will erode less than ½” of wood fiber per century of exposure.

While wood is often painted or stained to prevent the discoloration caused by weathering, some people appreciate the look – or *patina* – of well weathered wood. In fact, some manufacturers are supplying artificially aged wood products to the marketplace. The treatments include special stains, burning the surface or even beating the wood surface with chains. Because of the popularity of the old wood appearance, suppliers are able to charge the high prices required to justify the costs of dismantling old buildings.

In addition to the weathered appearance of old wood, this lumber comes with the interest of being a part of history. Sometimes the wood will be of a species that is difficult to find now (e.g. chestnut), or will have come from large, slowly-growing trees that are less common now (e.g. ‘heart pine’). However, even if the wood properties themselves are not unusual, many people appreciate that the wood is ‘antique’ – it was cut, milled and used many years ago. Finally, some people find satisfaction in the environmental-impact implications of reusing old materials.

Regardless of the motivation, old wood is potentially valuable. As with any niche product, making the connection between supplier and customer can be more challenging than with commodity lumber. However, because of its special features, customers are willing to pay a premium.

Wildlife Management Calendar for March

Craig Harper, Professor, Wildlife Management

Wildlife Notes

White-tailed deer finish shedding antlers
 Cottontails begin breeding
 Bears emerge from dens
 River otters are born
 Spring squirrel litters are born
 Male wild turkeys begin strutting and gobbling
 Male ruffed grouse begin drumming
 Mourning doves begin nesting
 Male woodcock courtship flights can be observed at dusk
 Wood ducks and Canada geese begin nesting
 Great horned owls, red-tailed hawks, and bald eagles are nesting
 Purple martins begin to arrive
 Tiger salamanders may be seen searching for ephemeral ponds
 Southeastern chorus frogs, spring peepers, American toads, Southern leopard frogs, and crawfish frogs are calling and breeding

Habitat Management

Burn woods and old-fields using prescribed fire to enhance conditions for wildlife

- secure burning permit and develop burning plan with Tennessee Division of Forestry
- make sure firebreaks are in place
- get help from experienced personnel if you don't have experience burning
- burning fields is **much** more beneficial for wildlife than mowing!
- Refer to Chapter 6 in *Native Warm-Season Grasses: Identification, Establishment, and Management for Wildlife and Forage Production in the Mid-South*, PB 1752, for additional information on managing early successional habitats

Disk fields to encourage early successional growth

- disking is especially good to set back succession if you can't burn
- disk one-third of the field in a block or strips
- blocks are better than strips—makes it more difficult for predators to find nests
- strips should be **at least** 30 feet wide

Disk strips around field edges to encourage early successional growth

- disk strips the width of your sprayer to facilitate killing undesirable plants if needed
- can be used as firebreaks for fields managed with prescribed fire
- leave a soft edge buffer between woods and the field edge—at least out to the drip-line of the trees

Plant firebreaks for additional forage, seed, bugging opportunities

- alfalfa, clovers, and annual lespedezas can be planted in mid- to late February
- warm-season plantings can be made later in May
- see *A Guide to Successful Wildlife Food Plots: Blending Science with Common sense, PB 1769*, for seeding rates and additional information.

If you won't burn or disk fields, mow in late March – just before spring green-up

- for best results for wildlife, **disk the area after mowing** to facilitate litter decomposition, improve travel for small wildlife and stimulate the seedbank
- mow now, but **don't mow during the growing season** or you'll disrupt nesting and reduce fall recruitment of wildlife that use early successional cover in summer

Spray tall fescue, orchardgrass, and other perennial cool-season grasses

- spraying now is not as effective at killing these grasses as spraying in October/November; however, a 70% reduction in grass coverage can be expected following spring sprayings
- spray a glyphosate herbicide @ 2 quarts per acre (with surfactant) when grass is 8 – 10 inches tall and actively growing in late March/early April (just prior to warm-season plants germinating or sprouting)
- after grass is killed, burn the field (if needed), then disk to stimulate the seedbank
- when disking in the spring, a preemergence application of imazapic (6 – 10 ounces of Plateau) may be necessary after disking to control johnsongrass, crabgrass, broadleaf signalgrass, and other undesirables germinating in late spring
- Refer to in *Native Warm-Season Grasses: Identification, Establishment, and Management for Wildlife and Forage Production in the Mid-South*, PB 1752, for additional information on eradicating perennial cool-season grasses and other undesirable species

Finish planting trees/shrubs for wildlife

- establish hedgerows across fields with soft-mast bearing trees and shrubs
- hedgerows can be used to break-up fields into sections
- also plant trees/shrubs in blocks at end of fields or in “odd” areas
- apple, crabapple, persimmon, wild plum, elderberry are good choices
- refer to *Urban Trees for Wildlife*, SP530 for a list of other trees and shrubs to consider

Fertilize/prune trees/shrubs for increased soft mast production

- this is for trees out in the open, not those in woods
- fertilizing oaks in woods is a waste of time and money; to increase mast potential for trees in the woods, timber stand improvement practices are needed

Erect boxes for wood ducks and bluebirds

- 1 box per 100 yards of shoreline is adequate for wood ducks
- clean out old wood duck boxes and replenish with fresh wood shavings (about 4 – 6 inches)
- repair/install predator shields if necessary
- In Tennessee, wood ducks may begin searching for nest sites in February / March
- bluebird boxes should be no closer than 80 yards apart

Build brushpiles

- put large stems on bottom, small stems on top
- building brushpiles along a woods edge adjacent to a tall fescue pasture or hayfield may do more damage than good because all rabbits present will then be isolated for predation
- best done along and within high-quality early successional habitat (native forbs and grasses with scattered brambles and shrubs)

Keep bird feeders full

- black-oil sunflowers are a favorite of many birds
- thistle seed is preferred by goldfinches
- suet provides energy for lots of birds during winter
- refer to *Improving Your Backyard Wildlife Habitat*, for information on specific feeders and seed for birds

Finish strip-mowing or silage chopping grain fields to provide seed

Spray Chinese privet and Japanese honeysuckle

- spraying the green foliage of these species now prevents harming dormant desirable species
- 5% solution of Garlon 3-A or 1% solution of glyphosate herbicide and water works well for honeysuckle
- 1% solution of Arsenal AC works well for privet
- for privet too large to spray foliage, cut stem and treat cut stump surface with 1% Arsenal AC or 50% Garlon 3-A; ALSO, stems may be treated with basal application of 20% Garlon 4 with commercially available basal oil with a penetrant

Plant perennial clover and alfalfa plots

- ladino white clover, alsike clover, red clover, and alfalfa do well when sown in March
- refer to *A Guide to Successful Wildlife Food Plots: Blending Science with Common Sense*, PB 1769, for information on planting and soil amendment

Spray weeds in cool-season food plots before the weeds get too large

- most cool-season weeds are best killed when sprayed before they reach 3 – 5 inches tall
- refer to *A Guide to Successful Wildlife Food Plots: Blending Science with Common Sense*, PB 1769, for herbicide recommendations
- always read and follow directions on the herbicide label before using

Fertilize cool-season forage plots

- those containing oats, wheat, and/or cereal rye will respond to 30 pounds of N per acre
- fertilize perennial forage plots with P and K according to soil test recommendations

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

- applications of lime require about 6 months before full effect on pH is realized

Establish salt/mineral licks for white-tailed deer

Complete drawdown of fields flooded for waterfowl

Wildlife Damage/Population Management

Skunks are on the move

- skunks mate in February and March
- live traps work well
- once skunk is trapped, approach slowly, cover with a tarp, carry to water source (in truck bed), and drown the skunk

Close crawl spaces under the house and check for openings in the attic

- helps keep skunks and squirrels from getting into places where they are not welcome

Set traps correctly to catch moles!

- make sure runway (tunnel) is active before setting traps
- excavate 6-inch by 6-inch square exposing runway and determine exact depth of runway
- replace dirt firmly, but not compacted
- set trap at exact depth so mole will be caught

Vultures can present a real problem for calving by plucking out eyes and eventually killing calves

- try scare tactics as soon as vultures appear during calving season
- contact USDA-Wildlife Services if problems continue; they can give you a referral to the US Fish and Wildlife Service for depredation permit if warranted
- Refer to *Managing Nuisance Animals and Associated Damage Around the Home*, for additional information.

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