



FORESTRY, WILDLIFE & FISHERIES UPDATE NEWSLETTER

OCTOBER 2011

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EMERALD ASH BORER & THOUSAND CANKER DISEASE CONFERENCE

Wayne Clatterbuck, Professor, Silviculture and Forest Management



**Emerald
Ash Borer**
[learn more >](#)

A two and one-half day conference on two exotic invasive tree pests, Emerald Ash Borer (EAB) and Thousand Canker Disease (TCD) of walnut will be held on Nov. 30 – Dec. 2 in Knoxville on

the UT Agricultural Campus in Hollingsworth Auditorium, Ellington Plant Sciences Building.

State of the art information about these two pests will be presented including current research, identification and current status of the pests, regulatory issues and potential control measures.

Mark the date on your calendar. More information to follow once conference is finalized. Pesticides points will be available.



DUTCH ELM DISEASE

Wayne Clatterbuck, Professor, Silviculture and Forest Management

Since its discovery in the United States since 1930, Dutch elm disease has affected and killed thousands of native elms in both urban and rural environments. The three native elms, American, slippery and rock, have little resistance to Dutch elm disease, but individual trees within each species vary in their susceptibility to the disease. Because of the variations in susceptibility, some elms will persist longer than others. The most common of these species, American elm, is scattered in the eastern hardwood region, but is more prevalent on wetter sites, riparian areas and along river bottoms.

Recognizing Dutch elm disease during early to mid-summer is relatively easy. Infected trees have wilted, with yellow foliage on one or more branches. At times, an entire crown will be affected all at once. Infected branches develop a brown stain just under the bark. During late summer and with droughts, Dutch elm disease is more difficult to identify because of the natural color changes associated with autumn color and leaf drop.



Dutch elm disease is spread from infected to healthy trees by root grafts and bark beetles. The insect vectors are the native elm bark beetle and the smaller European elm bark beetle. These beetles emerge from infected trees carrying fungus spores that they transmit to healthy trees as they feed. The spores germinate in beetle galleries and the fungus spreads through the tree, eventually plugging the water-conducting system.

Losses to Dutch elm disease in hardwood forests vary in severity. Generally the more American elms in a stand, and the more concentrated they are, the more severe are the losses from the disease. Although all elms are susceptible, seedlings and saplings are less susceptible than larger trees because they are not attractive to the bark beetles and are less likely to root graft. Control of Dutch elm disease in hardwood stands is generally not feasible, but commercial size American elms should be salvaged if they make up a significant portion of the stand.

In urban environments, elms may be treated with a fungicide (injection) to protect elm trees from infection via beetle transmission. This treatment is expensive and must be repeated every one to three years, thus it is only appropriate for high value or historically important trees. Preventive fungicide injection, eradicated pruning with the disease is first encountered, and good sanitation practices are generally the only options available for individual elms.



Modified From: Northern Hardwood Notes 7.03, North Central Forest Experiment Station

EVERGREEN TREES FOR SCREENS AND HEDGES

Wayne Clatterbuck, Professor, Silviculture and Forest Management

Screens and hedges are a popular way to create privacy or hide an undesirable view. They can be anything from a section of fence to individually designed panels, brick walls or a wall of green plant material. Plantings are usually a less expensive way to create privacy than a fence or wall. Screens or hedges also offer additional advantages to many landscapes other than privacy. For example, they can frame a terrace, provide a backdrop to an herbaceous garden, and serve as a noise barrier.

Most screens are evergreens, or those trees that retain their foliage through the year. Evergreen plants with low-branching habits and dense foliage are most effective for screening and providing the most privacy, especially in winter. Where growing space is limited, consider using fastigiated (upright) tree forms.

When planting a screen or hedge, allow adequate spacing for the plants to thrive in a healthy environment and provide the desired privacy. Placing plants in a triangular pattern increases the area's depth and has more appeal than placing the plants in a single straight row. The triangular pattern can be created by planting two or more rows with trees staggered in each row. Spacing between plants should be 5 to 8 feet within and between rows.

A few recommended trees for screens and hedges in Tennessee include the hollies including the varieties Nellie R. Stevens, Savannah, and Foster; juniper, commonly called eastern redcedar; magnolias – southern, sweetbay and Little Gem; hemlocks – Canadian and Carolina (not in areas with hemlock woolly adelgid); and eastern arborvitae (*Thuja*).

Leyland cypress and eastern white pine are frequently planted as borders and screens along property boundaries. Although these trees form excellent screens, their fast growth and large size often exceed the growing space provided. These trees must be maintained through clipping and pruning which becomes an annual time-consuming and expensive process.

Plan accordingly when selecting a tree for a screen or hedge. Make sure that the species is well-suited to your planting site and has ample room to grow. Also consider the fruit or seed that the mature tree will produce. Wise planning today during tree selection will alleviate many future tree problems

WILD GRAPEVINE MANAGEMENT

Wayne Clatterbuck, Professor, Silviculture and Forest Management

Grapevines can be a problem in forest management because they damage trees by breaking tops and limbs, and twisting, bending and often breaking tree boles. Merchantable volume is lost and tree growth and quality are reduced. They can also cause trees to be uprooted and killed. Once grapevines get into and dominate the crown of the tree, the potential use of that tree for future timber products is reduced. Often the leaves of grapevines supplant the leaves in the uppermost crown of the tree, reducing the photosynthetic capacity of the tree and reducing tree growth. Although grapevines produce food and cover for many species of wildlife, an overabundance of grapevines can also conflict with wildlife management goals for maintaining mast-producing trees.



Grapevines need light to grow. Vines are prolific stump sprouters and they root easily. They also produce large amounts of seed that stay viable in the soil for 10 to 15 years. The keys for controlling grapevines are in **canopy shading** and the **use of herbicides**.

Vines can be controlled by cutting the vines near the groundline using tools such as blades, loppers, hatchets or chain saws. Cutting of vines should occur at least 5 years before a timber harvest where there is ample overhead shade. The cut vine stumps will sprout, but the sprouts will die within 3 to 4 years from shade or lack of sunlight.

Use herbicides to control grapevines only when mature stands are ready to harvest and 5-year pretreatment is not feasible. Vines can be sprayed at their base with an herbicide-oil mixture or large vines can be controlled with the hack & squirt method --- cutting a frill with a hatchet in a vine, then spraying the herbicide in the frill with a squirt bottle. This will control vines present at the harvest. However, even if you control vines before the harvest, grape seedlings will germinate prolifically in the new stand. You will have to control those vines at a later date in the new sapling stand.

How many vines per acre should you tolerate? It depends on what percentage of the stand is dominated by grapevines and on management objectives. On high-value sites, you may want to eliminate all grapevines. For wildlife management purposes, it may be desirable to retain a few grapevines. Where “arbors” are present (vines overtopping vegetation creating an opening in the stand), few additional grapevines are needed in the remaining stand for wildlife food. For timber production, 50 grapevines per acre or about 5 percent of the trees in the stand have grapevines in their crowns are usually tolerable. Allowing grapevines to develop in arbors and applying grapevine control in the remaining stand is a feasible compromise for integrating both timber and wildlife objectives.

STUMP SPROUTS

Wayne Clatterbuck, Professor, Silviculture and Forest Management

Young hardwood stands almost always contain some stump sprouts and occasionally entire stands can develop from stump sprouts. Because of their vigorous early growth from large, intact root systems, stump sprouts often dominate other forms of reproduction such as newly germinating seeds and small seedlings with diminutive root systems. The quality and longevity of trees resulting from stump sprouts are sometimes questioned. Outlined below are a few guidelines for successful trees that originate from stump sprouts.



1. Stems that start from small stumps cut at or near the ground level are considered good risks. Harvesting operations should encourage leaving low stumps.
2. Sprouting is more prolific on smaller stems and tends to decrease progressively with increasing stump size once stems are larger than 8 to 10 inches.
3. Research has shown that sprouts that develop on low stumps are structurally sound as single-stem seedlings.

4. Multiple stump sprouting is often perceived as a detriment to desirable tree form. However, with time the most vigorous sprout will express dominance and other sprouts will eventually succumb. Most multiple sprouting will occur on high stumps (poor risks because of stump decay) that should have been cut lower to the ground. Multiple sprouts can be pruned, but this can be a costly operation. Most of the pruned sprouts would have succumbed over time. However, pruning of multiple sprouts can be beneficial and increase sprout growth, if cost is not a consideration. A single sprout will grow faster in height than multiple sprouts because more energy is received by the single stem instead of the energy being partitioned among multiple stems.

COMMON HARDWOOD MANAGEMENT MISTAKES

David Mercker, Extension Specialist, Forestry

Sometimes misguided by traditions of the past or the lack of adequate science-based information, forest landowners make mistakes with regard to their hardwood forest management. What seems logical at first, once implemented could prove problematic, particularly if such mistakes are repeated through the generations. Based on observations made while assisting and advising private forest landowners, there are a number of common errors made repeatedly, that are addressed here:

1. Maintaining a closed canopy through a selection harvest is always good forestry. Single tree selection is one method of harvesting. It has application particularly for those landowners who rank aesthetics and recreation high on their ownership objectives. It can be used in combination to thin younger stands or remove undesirable trees, particularly when overcoming mistakes of the past. However, most hardwood forests if managed for quality timber production, at some point, should undergo a heavier stand regenerating harvest (even if only applied in small patches). This allows adequate sunlight to reach the forest floor, stimulating new growth. By not periodically regenerating a forest, the composition and quality will change over time.
2. A stand marked with paint means responsible forestry is being practiced. This depends. Under what parameters were the trees chosen for harvest? If tree size, species, or value were the only considerations, then responsible forest management was likely not practiced. Harvesting only these types of trees will leave a residual stand poor in quality or low in value. Instead, harvest consideration should also be given to include the “D” trees: **d**warfed, **d**ying, **d**iseased, **d**amaged, **d**eformed, **d**efective, and **u**ndesirables. This is the necessary part of weeding the stand and eliminating unwanted seed sources.
3. The forest soil will take care of itself. Don’t be so sure. We tend think of fallen and decomposing leaves and twigs as soil in the making, rather than the organic matter and nutrient recycling they are. True soil is derived from weathering of subsoil rocks, from wind-blown particles that escaped from distant places, or from alluvial sediment deposited after transport via water. All are processes that can take centuries to occur. Stresses that are placed on forest soils during logging are normally restricted to skidding lanes, haul roads, log landing areas, and stream crossings. Concerted effort should be made to protect soil in these areas and thereby assure protection of the water resources. Landowners should understand and follow accepted best management practices (BMP’s).

4. Harvest timber only when you need the money. Saving timber as a security to hedge against off-years of other sources of income is not always advisable. Trees are a crop. Though somewhat unique in that they can be retained on the stump for years, doing so could sacrifice considerable production and income. Annual growth rate and return on forest investment peaks, then declines. Harvesting timber crops at or near the peak, then converting those funds to a more favorable alternative investment, is a more prudent decision. Also, it is wise to track timber markets. Waiting to sell timber when other sources of income are lower, may miss optimum markets.
5. This has always been the “assumed” property boundary. Landowners beware! The penalty for timber trespass can be very high. Be certain of property boundaries. Study the deed, reach agreement with your neighbors, and seek assistance from a professional forester or surveyor.
6. Small trees will grow to become big trees - some will, and some won't. If a tree has for too long been suppressed by growing in the understory of larger trees, it will not likely release and grow vigorously once the taller tree(s) are removed.
7. Knots on the trunk of a tree will cover up and make fine lumber. This depends. On younger, vigorously growing hardwood trees, knots often become concealed and produce quality lumber, particularly if the knots are small-sized. However, large knots or knots formed on slow growing, decadent trees may heal superficially, but never produce clear lumber.
8. I can handle this on my own – The opportunity to sell timber is infrequent for most landowners, and achieving proficiency is difficult (and usually forgotten between sales). Therefore, it is always advisable to first see a forester, and perhaps several. Not only is a forester's professional expertise needed, but foresters have knowledge of current cost- share programs, laws/regulations/taxes, etc. This expertise can save you money, make you money, or preserve your money.

HEART BREAK OF HIGH-GRADING

Larry Tankersley, Extension Associate, Forestry

Several times this summer, I have been out with landowners wishing to cut some timber. They had called several buyers and had folks out who just didn't seem interested and never called back.

When I got to the properties, it became apparent why the timber buyers were lukewarm to cool about the timber being offered for sale. Basically the trees being offered for sale were of very little value. Asking a few questions and just looking around, it became apparent that there was indeed a problem. The forest had been high-graded the last time it was cut. The red oak and white oak had been removed 15-25 years ago. This left mostly hickory and beech in one stand and maples, gum and elm in the other stands.

A quick check of *“Tennessee's Forest Products Bulletin”* reveals that prices for many of the species remaining after the high-grade harvest are in the “miscellaneous hardwoods” category. (<http://state.tn.us/agriculture/publications/forestry/tfbp.pdf>).

For our wood products industry, these are the least desirable species and thus don't get much attention from wood buyers. Often these stands of trees can be considered “out of the timber business”, as it will take many years to rehabilitate the forest.

Wayne Clatterbuck offers a number of suggestions for improving degraded stands in his UT Extension publication, *Treatments for Rehabilitating Degraded Stands*,

<https://utextension.tennessee.edu/publications/Documents/SP680.pdf>

When contemplating a timber cut, it is important to not only consider the trees that are going to be cut, but also the ones that will be left once the cutting operation is over. The landowners that I visited were very disappointed to find that their timber options were limited.

High-grade timber harvesting may meet present needs, but it violates a definition of **sustainable** as it compromises the ability of future generations to meet their needs. Let's say "no" to high-grading every chance we get. Let us know if we can help.

GOOD NEWS ON GLOBAL DEFORESTATION

Adam Taylor, Associate Professor, Forest Products

The loss of forests can alter ecosystems and deprive people of the many benefits provided by trees. Deforestation is a serious ongoing problem; however, the good news is that the global deforestation rate is going down.

People have been using trees and impacting forests throughout history, and concerns over deforestation have always accompanied our heavy reliance on forest products. Responses to these concerns over time have included the development of the science of forestry, the establishment of forest reserves such as the US national forests and, most recently, certified forest programs. At the same time, there are more people on earth, who are consuming more wood products. So, how are the forests faring?

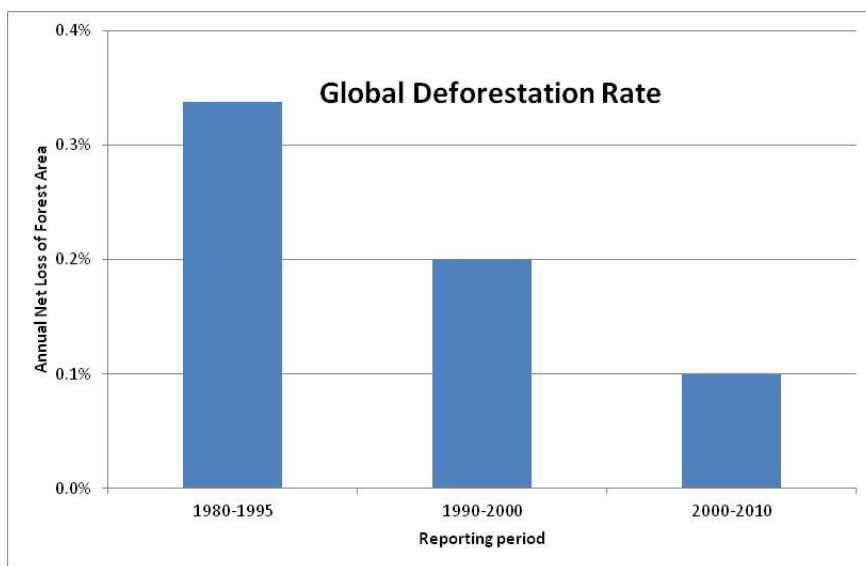
The United Nations' Food and Agriculture Organization (UNFAO) has been regularly reporting on the extent and condition of the world's forests over the past 15 years

(<http://www.fao.org/forestry/sofo/en/>).

Using the best available data, they have provided estimates of the loss of forest land (deforestation) for individual countries and for the whole world. The data confirm what most people would expect: we have less forest area on earth than we used to. However, looking that the reports over time reveals an encouraging trend: the rate of global deforestation is slowing.

Deforestation is also a localized phenomenon. There are parts of the world where forest are being lost at alarmingly high rates, eg. the Amazon river basin in South America, the Congo river basin in Africa and in Indonesia. By contrast there are places on earth where there is net 'afforestation' or gain of forests, eg in China. In the United States, the forest *area* is stable but the amount of timber has been steadily increasing. The site-specific nature of deforestation suggests that solutions to the problem should be focused also.

Finally, the evidence indicates that the causes of deforestation are not excessive global wood consumption but rather poverty and a lack of law enforcement in certain forest areas. Thus, it is likely that it is ongoing efforts to alleviate poverty and to prevent illegal logging that are responsible for the deforestation rate moving in the right direction. We can hope that continued efforts will eventually stop deforestation and return forests to barren lands.



WILDLIFE MANAGEMENT CALENDAR FOR NOVEMBER

Craig Harper, Professor, Wildlife Management

Wildlife Notes

White-tailed deer breeding season peaks in most areas of TN during November

Wild turkeys form winter flocks

Groundhogs begin to hibernate

Ducks begin to migrate through in substantial numbers

Sandhill cranes and an occasional rare whooping crane migrate through east TN

Owls and hawks increase vocalization and begin establishing territories just prior to mating season

Blackbirds form large winter flocks

Marbled salamander eggs hatch in ephemeral forest pools

Habitat Management

Spray non-native perennial cool-season grasses (such as tall fescue and orchardgrass) to improve/establish early successional areas

- October through November is the optimum time to kill these grasses!
- spray to release the seedbank or in preparation to plant native warm-season grasses
- use 1.5 – 2 quarts per acre of a glyphosate herbicide (such as Roundup) with a surfactant
- Using glyphosate to kill cool-season grasses after a killing frost will not harm desirable warm-season grasses and forbs as they will be dormant
- refer to *Native Warm-Season Grasses: Identification, Establishment and Management for Wildlife and Forage Production in the Mid-South*, PB 1752, for additional information on eradicating non-native perennial cool-season grasses;
<http://www.utextension.utk.edu/publications/wildlife/default.asp>

Disk areas within old-fields to enhance brooding cover for wild turkeys and bobwhites

- will stimulate desirable forb growth next spring
- will reduce grass dominance where needed
- will reduce woody encroachment by sweetgum, elms, maples and other undesirable woody saplings in the field

Disk firebreaks around fields and woods before the ground freezes so they'll be ready to burn next March/April

- disking now will stimulate forbs next spring
- winter wheat can still be sown, if desired, or leave fallow
- don't disk firebreaks immediately adjacent to the woods; come out beyond the drip line of the trees, 50 feet from the trees, and allow a soft edge to develop

Begin dormant planting native warm-season grasses

- don't plant too deep – no more than ¼ inch!
- don't forget preemergence weed control next spring

Enhance the cover around old-fields by thinning (killing) undesirable trees 100 feet into the woods

- girdle unwanted trees and spray wound with a mixture of Garlon and Arsenal AC
- use 2 quarts Garlon 3A and 12 ounces Arsenal AC filled to 1 gallon of water
- dead standing trees (snags) provide perching, roosting, denning, feeding sites for many wildlife species
- increased groundcover is stimulated by the additional sunlight, improving forage and nesting cover for many wildlife species

Plant 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
- wild plum, crabapple, persimmon, elderberry and others are good choices
- refer to *Improving Your Backyard Wildlife Habitat*, PB 1633, for a list of other trees and shrubs to consider

Fertilize/prune trees/shrubs for increased soft mast production

- this is for trees/shrubs 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, refer to TSI activities

Continue to strip-mow or silage-chop dove fields to provide seed and hunting opportunities

- strips can be disked and top-sown with winter wheat (2 bushels per acre) to provide additional forage opportunities
- migrating doves appreciate your efforts and the late dove seasons can offer great shooting

Spray perennial forage food plots for weed control if necessary

- refer to *A Guide to Successful Food Plots: Blending Science with Common Sense*, PB 1769, for specific information

Soil test now for spring plots

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

Flood waterfowl impoundments

- a depth of 8 – 12 inches is ideal for dabbling ducks

Continue watching and identifying good acorn producers

- one-third of the oak trees produce roughly 70% of all the acorns
- if you are interested in improving acorn availability in your woods, distinguishing good producers from poor producers will help you identify which trees to favor
- once acorns begin to fall, walk through the woods and mark trees with good acorn crops with aluminum tags or tree marking paint near the bottom of the tree
- continue this for at least 3 years and a pattern will begin to develop identifying those trees that do not ever produce many acorns (even in a good acorn year)
- good producers can be released by killing or removing unwanted adjacent competitors, allowing the crowns of favored trees to expand and produce more acorns

Continue Timber Stand Improvement activities

- stimulate growth among oaks, beech, cherry, persimmon, blackgum, and other mast producers by killing surrounding competitors
- girdle unwanted trees and spray wound with appropriate herbicide
- a 50% solution of Garlon 3A and water and/or a 25% solution of Arsenal and water work well

Build brushpiles from thinned trees and pruned limbs

- put large limbs on bottom and small limbs on top for crevice space and overhead protection
- this is best done and the effect greatest along the edges of and within high-quality early successional cover (native forbs and grasses with scattered brambles and shrubs)
- building brushpiles along a woods edge adjacent to a tall fescue pasture or hayfield may do more harm than good because all rabbits present will then be isolated for predation

Clean out bluebird boxes to allow more room for roosting bluebirds when cool weather arrives

- 10 or more bluebirds may roost in a single box on cold nights

Clean-out wood duck boxes and replace old wood shavings with fresh shavings

- screech owls and squirrels may use the boxes through fall and winter
- repair/install predator shields if necessary

Put out bird feeders and keep them full - it's not too early

- refer to *Improving Your Backyard Wildlife Habitat*, PB 1633, for information on specific feeders and seed for birds

Wildlife Damage/Population Management

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

- helps keep snakes, skunks, and squirrels from getting into places where they are not welcome
- rodents are beginning to cache food for the coming winter; take action now to keep them out of your house
- glueboards are very effective in trapping mice, snakes, and lizards looking for a warm place inside your basement or garage

Blackbirds and starlings have gathered into large winter flocks

- don't allow them to roost in your trees; if they start, they'll form a habit
- repel them with noise makers (shotguns, firecrackers, banging metal pans together)
- be persistent

Deer season is underway

- allow hunters access to your land if you have a problem with too many deer
- shoot the females (does); concentrating on bucks does little to control overpopulation
- in many overpopulated areas, it may be necessary to kill 1 doe per 10 acres (sometimes more) before the population is reduced to acceptable levels
- where Quality Deer Management is desirable, the population should be maintained with the carrying capacity of the property to provide adequate forage and cover; bucks should be allowed to reach 3 years of age before shooting them
- refer to *Quality Deer Management: Guidelines for Implementation*, PB 1643, for additional information;
- remember to take a kid hunting!

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

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