

The cover of the magazine features a photograph of a forest scene. In the foreground, a large, moss-covered rock is prominent on the left side. The ground is covered with a dense carpet of small purple flowers, likely violets, interspersed with green ferns. In the background, a rocky cliff face is visible, with a tree trunk standing on the right side. The overall scene is lush and natural.

Kentucky Woodlands

Volume 3 Issue 1
April 2008

Magazine

Timber Trespass in Kentucky
Wood Energy Possibilities
Marrowbone Creek State Forest

Kentucky Woodlands

Volume 3 Issue 1 Magazine

*Promoting stewardship and sustainable management
of Kentucky's non-industrial private forests.*

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From the Editors of the Kentucky Woodlands Magazine:

There have been several important issues that have entered the spotlight over the winter. This issue of the Magazine provides information on the newly developed Certified Master Logger Program and its benefit to woodland owners. Another topic that has generated significant interest unfortunately is timber theft. Several notable cases of timber theft in eastern Kentucky have garnered national interest. This issue provides useful information on this topic that is designed to help those woodland owners selling timber as well as those wanting to protect their woodlands from abuse and theft.

Recent state and federal budgetary woes are slated to impact the Kentucky Division of Forestry and the University of Kentucky and we will provide a synopsis of the situation and its ramifications for woodland owners. As always we provide updates on forest health issues and other information of interest to woodland owners including the announcement of the upcoming Kentucky Woodland Owners Short Course.

On behalf of the University of Kentucky Forestry Extension and the Kentucky Division of Forestry we hope you enjoy and are enlightened by this issue of the Kentucky Woodlands Magazine.



Jeff Stringer,
University of Kentucky
Department of Forestry



Diana Olszowy,
Kentucky Division of Forestry

About the Cover:

Thomas Barnes, UK Extension Wildlife Professor, an award winning photographer and author contributed the cover photo of a solid stand of purple phacelia taken at the Sally Brown Nature Preserve in Garrard County. The Sally Brown Nature Preserve covers 632 acres, with an additional core buffer area of 350 acres. It contains numerous scenic vistas of the Kentucky River Palisades during the fall and winter months. The preserve is open to the public all year from sunrise to sunset. For more information call 859.259.9655.

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Carter Caves in Carter County. Photo courtesy: Thomas Barnes




TIMBER TRESPASS IN KENTUCKY

by Jeff Stringer

Photos courtesy: Jeff Stringer

Timber harvesting operations can be done in a manner that conserves the land and limits water quality problems through the use of Best Management Practices (left) or they can be conducted carelessly with little regard for the land, remaining trees, or water quality (above). Intentional timber trespass operations rarely show any regard for the land and, the resulting damage, can have long lasting negative impacts.



Timber trespass is the term commonly used in forestry circles to describe the unapproved cutting of trees and the removal of timber. Timber trespass includes the unintentional cutting of timber due to boundary mistakes or disputes as well as timber theft, the intentional stealing of timber. This article provides information on the legal implications of both unintentional cutting and intentional timber theft. It also provides information to woodland owners who are planning on harvesting timber on how to avoid unintentional trespass as well as how to help protect woodlands from timber trespass.

THE LEGALITIES OF TIMBER TRESPASS

The legalities of timber trespass can be confusing. As we commonly define timber trespass—the unapproved cutting of trees and removal of timber—it actually encompasses two distinct violations of criminal law, a trespass and a theft. The unauthorized removal of timber is also a violation of civil law, as will be discussed in this article.

To simplify the discussion, let us focus on the most common situations involved with timber and logging. As indicated previously, knowingly moving onto another person's property is considered a criminal trespass if someone knowingly crosses a fence (a Class B misdemeanor with a maximum fine of \$250 and 90 days in jail) or if they knowingly cross an unfenced boundary in the woods (a misdemeanor with a \$100 penalty and no jail time). If the boundaries are not well marked or designated in the woods, a criminal trespass might be hard to prove. Regardless of whether the damage was done as part of a criminal trespass or as part of unintentionally crossing a boundary, the rightful owner of the land could be awarded compensation for damages that occur to the land, such as fixing roads or skid trails that were built or damaged, costs associated with removing tops and debris, and other costs that the landowner incurred. Also, if timber was cut and removed, the rightful owner could get compensated for the value of the timber that was lost.

Theft is a separate criminal issue that implies intent to steal property. In this case, if timber was cut and removed and worth over \$300, it would be considered a Class D felony. Typically, this is punishable by one to five years in prison. The violator could also be made to pay the rightful owner restitution for the stolen timber. *(continued on page 2)*



Photo courtesy: Daniel Bowker

Determining the value of timber lost often starts with consulting foresters measuring remaining stumps and applying several techniques to determine volume and value loss. Woodland owners experiencing a timber trespass can be eligible for triple the damages.

To obtain further compensation, however, a woodland owner whose timber was cut without authorization would have to pursue civil action. This would entail use of Kentucky's timber trespass law KRS (Kentucky Revised Statute) 364.130 that provides for two levels of damages. The law awards triple compensation for the value of the stumpage (the value of timber as it stands uncut) cut and triple the value of damages unless the following conditions were met:

1. The logger or timber buyer was cutting on an adjacent property and had written permission or had a contract to be cutting timber on that property, and
2. The adjacent woodland owner was notified in writing using a certified letter delivered at least seven days in advance of the beginning of the logging operation and the adjacent landowner did not object to the logging or make contact with the person who sent the certified letter within seven days of receipt of the letter.

If the logger had a contract to log a neighboring tract, proper prior notification was done, and an adjacent landowner did not object within seven days, the adjacent landowner who had timber cut could only

be subject to compensation for the actual stumpage value and cost of damages, not three times. It is important to note that under this civil statute, there is a one-year statute of limitations that starts upon discovery of the trespass.

To summarize the legalities, a criminal trespass only occurs if a fence is crossed or the boundaries are marked or clearly designated and/or if a person knowingly crosses a boundary. If the trespass is accompanied by the cutting and removal of timber worth over \$300, the person can be charged with criminal felony theft and subject to imprisonment. Regardless, the landowner could be entitled to compensation for the timber cut and any damages to the property. If further compensation is sought, it must be done under civil law within one year after discovery of the trespass. Kentucky's timber trespass law allows for triple damages and triple stumpage values if there was no prior notification and other stipulations of the law were not adhered to.

HOW TIMBER TRESPASS OCCURS

Unintentional cutting of timber typically occurs due to one of several reasons. A logger can unknowingly cross an unmarked boundary in the woods, or a woodland owner does not know the correct boundary line and directs a logger onto the neighbor's property, or there is a boundary dispute. These scenarios indicate that the landowner who is selling timber should know where the boundaries are and have them clearly marked. Oftentimes, this is not the case, and woodland owners and loggers should be aware and deal with this situation.

Intentional cutting of timber, commonly referred to as timber theft, occurs by one of several means. It is not uncommon for an absentee ownership to be located and a logging operation set in motion to purposefully steal the timber. It is also not uncommon for a logging operation that is legitimately cutting a tract of timber to knowingly cross a boundary to steal trees. The last situation involves the theft of only one or a few high-value trees from a property.

Some properties and ownerships are more at risk for trespass and theft than others. Your property is at risk for timber trespass if:

- You are an absentee owner.
- There is remote, secluded access to your woodlands.
- Your woodlands contain high-value timber.
- There is a logging operation on an adjoining property.
- Your boundaries are not fenced or clearly marked.

HOW TO PROTECT YOURSELF

There are a number of things that can be done to help reduce the chance of timber trespass. If you are a woodland owner who is getting ready to cut timber, you should:

1. Clearly mark timber sale boundaries.
2. Buy or sell timber with a contract that clearly states the boundaries and make sure that everyone involved in the harvest knows the boundaries.
3. Notify landowners that have property adjacent to the timber sale boundary in writing of the impending harvest (per the timber trespass law KRS 364.130) at least seven days prior to the harvest.

Woodland owners who are not planning on a timber harvest should:

1. Make a copy of your deed and keep it available.
2. Have boundaries clearly marked so that they can be readily seen from adjacent properties.
3. Contact adjoining landowners and let them know that you have interest in growing your timber or woodlands and do not plan on harvesting any timber.
4. If you do not live on the property, ask adjacent owners to watch your property. Be sure to provide them with your contact information. Ask them to contact you if they see any harvesting activity on your property, and ask them to inform you if they are planning a harvest.
5. Contact the Kentucky Division of Forestry to have a Forest Stewardship Plan developed for your property. This is free of charge, and the forester can advise you whether you have any valuable timber, whether it is at risk from theft, and whether management could enhance your woodlands.
6. Contact a consulting forester and have a cruise conducted to determine timber value. This can be used to determine the basis for capital gains if you are planning on selling timber in the future, and the consultant can also alert you to potentially valuable timber that might be at risk relative to timber theft.

If you are made aware of an ongoing trespass, contact local law enforcement. Tell them the situation, indicating that a trespass and a felony theft is occurring and that you want the individuals off your property and the case investigated. It is also prudent to contact a consulting forester as they may be able to provide you and local law enforcement with critical information that can help an investigation.

Unfortunately, timber trespass is all too common in Kentucky, and timber theft continues to be a problem. While Kentucky has laws to deal with these issues, law enforcement is often ill-equipped to investigate timber trespass, and law enforcement and the courts do not pursue timber trespass aggressively. Further, the civil statutes require that individuals who have had timber cut provide significant monetary resources toward proving a case of timber trespass. This upfront financial burden, coupled with the less-than-certain outcome of recouping these expenses, causes many woodland owners to back away from civil action. Unfortunately, these conditions seem to indicate that timber trespass and timber theft will continue to occur unless something changes to treat timber trespass as a serious crime.

Regardless, protecting your timber and woodland assets is not something that can be taken lightly. Be alert to situations that might make your timber more prone to theft. Recognize that timber trespass is a possibility, and take measures to help minimize your risk. If you are selling timber or a logger engaged in a legal harvest, it

Photo courtesy: Jeff Stringer



Kentucky's woodlands can contain some very valuable trees. For example, a single veneer tree of the right species and size can be worth hundreds to thousands of dollars. If the woodlands contain high value trees, have absentee owners, and/or are adjacent to a timber harvesting operation then they are at an increased risk for timber trespass.

is your responsibility to ensure that you harvest within the boundary. If you are a landowner who might have a woodlands at risk, you should realize that timber theft is a possibility and work proactively to reduce the threat.

For further information about timber trespass in Kentucky, consult the University of Kentucky Forestry Extension publication titled "Timber Trespass." This publication can be obtained from your county Cooperative Extension office or at www.ukforestry.org.

ACKNOWLEDGMENT

The author thanks numerous reviewers including the Appalachian Roundtable; personnel with the Kentucky Division of Forestry; Pat Cleary, member of the Kentucky Association of Consulting Foresters; and attorney Edison Banks.

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Kentucky Woodland Owners Short Course

Making the “Most” of Your Woodlands

by Billy Thomas

Kentucky’s woodland owners are the caretakers of a significant resource that is critical to the state’s environment and economy as well as every citizen of Kentucky. These privately-owned woodlands support abundant wildlife and our state’s rich biodiversity, help filter our water and air, contribute to our state’s beauty and tourism industry, and support a wood industry in Kentucky valued from \$6 to \$8 billion annually.

Woodland owners control 78 percent of Kentucky’s woodlands and have many available management options to consider, based on their property and objectives. Making sense of these options and knowing where to get assistance are some of the biggest obstacles woodland owners face when it comes to getting the most out of their woodlands. Fortunately, an abundance of assistance is available to every woodland owner through the Woodland Owners Short Course (WOSC).

In order to assist Kentucky’s woodland owners in sustainably managing their woodlands, a number of forestry and natural resource groups are partnering to hold the WOSCs on a regional basis for the second year in a row. There will be an east, central, and west WOSC, with each tailored to that particular region of Kentucky. Each region will have three educational field-based programs: woodland management, wildlife management, and wood industry and your woodland. Participants are encouraged to attend all three programs in their region to graduate from the 2008 WOSC. However, everyone is welcome to attend as many programs as they want.

A couple of major changes for the 2008 WOSCs include holding the wildlife management programs on Wildlife Management Areas (WMA) that are managed by the Kentucky Department of Fish and Wildlife Resources (KDFWR) and the addition of the wood industry and your woodland program. We believe that wildlife management programs will be enhanced by having increased involvement with professionals of the KDFWR. We also believe that the wood industry and your woodland program will provide important insights to woodland owners related to what happens to their trees once they leave their property as well as the opportunity to visit wood-processing facilities. Since the majority of the raw material for Kentucky’s tremendous wood industry is derived from Kentucky’s private woodlands, this program can be valuable to woodland owners in managing and marketing their woodlands. One constant principle of all WOSCs is a sustainable woodland management thread throughout all programs and this year’s series is no different.

The WOSCs are a partnership effort by the University of Kentucky Cooperative Extension Service Department of Forestry, Kentucky Division of Forestry, Kentucky Woodland Owners Association, Kentucky Sustainable Forestry Initiative Implementation Committee, Kentucky Forest Industries Association, Kentucky Department of Fish and Wildlife Resources, Kentucky Tree Farm Committee, Kentucky Association of Consulting Foresters, and local county Cooperative Extension offices.

Mark your calendar now, and submit the registration form included in this issue of the Kentucky Woodlands Magazine for the 2008 Woodland Owners Short Course. Additional information regarding the program is available at www.ukforestry.org or contact UK Forestry Extension at 859.257.7597.

Location maps will be mailed to all registrants.

The WOSC is the largest woodland owner educational program offering in Kentucky and is a partnership effort of numerous forestry and natural resource organizations in Kentucky. This program will help Kentucky woodland owners better manage their property regardless of management objectives.

Photos courtesy:
Billy Thomas



2008 Woodland Owners Short Course

Locations:	Woodland Management	Wildlife Management	Wood Industry and Your Woodland
East Region WOSC			
Rockcastle County	July 10		
Johnson County (Paintsville Lake WMA)		August 7	
Rowan County			September 4
Central Region WOSC			
Scott County	July 17		
Adair County (Green River WMA)		August 21	
Marion County			September 23
West Region WOSC			
Ohio County	June 12		
Graves County (Kaler Bottoms WMA)		August 28	
Hopkins County			September 11

About the Author:

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The Kentucky Woodland Owners Association (KWOA) promotes economically and environmentally sound forest management and provides technical assistance to its members to improve their forest holdings.

Since 1994, KWOA has provided a forum for Kentucky's private woodland owners to consult with forestry experts, the logging and wood products industry, and professionals in related fields such as wildlife and agriculture.

KWOA is one of 27 state Woodland Owners Associations. Together, we form an affiliated national group, providing members with access to proven resources and successful programs. Nearly 47 percent of Kentucky is forested and 78 percent of that forestland is owned by more than 423,000 non-industrial private woodland owners, contributing over five billion dollars to Kentucky's economy. That translates into a lot of voting power. It also translates into an ability to help each other maximize the use of our land and pass it on to our heirs intact. Won't you be a part of the Kentucky Woodland Owners Association?

Yes! I want to join KWOA!

Forest Landowner (Only woodland owners have voting rights.) Business or Organization
 Professional (trained in field related to forestry or natural resource management)

ANNUAL DUES

\$30 KWOA Annual Membership

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Address _____

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I own _____ acres of woodland in _____ County, Kentucky

Cut out or copy and mail to:

KENTUCKY WOODLAND OWNERS ASSOCIATION, 1483 Big Run Road, Wallingford, KY 41093 or call 606.876.3423 for more information.

Woodland Owner Programming Report

The 3rd Annual Ohio River Valley Woodland and Wildlife Workshop was held March 15 in Campbell County. More than 120 woodland owners attended educational programs of their choosing with concurrent workshop sessions covering a variety of topics such as selling timber, a woodland management introduction, crop tree release, starting a new forest, evaluating woodlands to acquire useful management information, how to manage forest wildlife, identification and prevention of wildlife damage, identification and habitats of birds, managing white-tailed deer, sustainability certification and carbon markets, estate planning, forest health, native plants, and managing invasive plants.



Participants at the Ohio River Valley Woodland and Wildlife Workshop.

Photo courtesy: Renee Williams

Participants also had the opportunity to speak with forestry and natural resource professionals who either gave them immediate answers or pointed them in the direction where they could find answers to their concerns. The Ohio River Valley Woodland and Wildlife Workshop rotates between Ohio, Indiana, and Kentucky on an annual basis and will be in Ohio next year. University of Kentucky Forestry Extension, Kentucky Division of Forestry, Kentucky Department of Fish and Wildlife Resources, Ohio State University, and Purdue University personnel served as presenters.

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Forestry Water Quality Plans: Agriculture Water Quality Act Implications for Woodland Owners

by Amanda Abnee Gumbert

Do you plan to harvest timber, plant trees, or do other forestry activities on 10 or more acres? Do you farm 10 or more acres? If so, you are required by Kentucky state law to implement an agriculture water quality plan.

The Agriculture Water Quality Act was passed by the Kentucky state legislature in 1994. It states that landowners with 10 or more acres in agricultural or silvicultural (forestry) production must develop a water quality plan. This plan documents best management practices being followed to protect water resources. Best management practices related to forestry include: properly installing logging roads and stream crossings; maintaining streamside management zones; and reclaiming and revegetating erodible areas such as skid trails, logging roads, and log decks. Best management practices for your property could also include planned grazing systems for livestock, filter or buffer strips around crop fields, animal waste storage structures, and nutrient management plans. Livestock should have limited access to streams. In addition, the plan should include information about proper handling of herbicides and pesticides and proper maintenance of septic systems.

To develop a water quality plan, a landowner must first identify activities planned or ongoing on the property that have the potential to pollute the water. Then the landowner can use planning tools (discussed below) available through the University of Kentucky Cooperative Extension Service or the Kentucky Division of Conservation to answer questions about his or her operation. By answering these questions, the landowner can identify the appropriate best management practices needed. Then, the landowner documents that these practices are being used and properly maintained. In many cases, proper practices are already being implemented. Creating an agriculture water quality plan provides landowners with a document that says they are doing the right things to protect water quality on their farm.

An agriculture water quality plan is not a voluntary document, and it must be completed and on file at the local Conservation District office if the landowner is planning to apply for state cost share programs. As farming or forestry operations change or ownership of the property changes, landowners should update their plan to reflect these changes.

By implementing an agriculture water quality plan, landowners will be helping to protect both surface and groundwater from agricultural and silvicultural contaminants. Keeping the water resources of the Commonwealth clean protects human and animal health and reduces the cost of treating drinking water.

Planning tools, including online interactive questionnaires, CDs, and publications are available to help landowners develop and implement their agriculture water quality plan. An online tool is available at www.ca.uky.edu/enri by clicking on "Develop Your Ag Water Quality Plan." Various fact sheets and publications are available at www.ca.uky.edu/enri/PUBS/index.htm. A publication titled "Forest Water Quality Plan" (FOR-96) by the University of Kentucky Department of Forestry is available at www.ukforestry.org and was developed specifically for woodland owners to assist them in developing an agriculture water quality plan for their woodlands. You also can visit your local Cooperative Extension office (www.ca.uky.edu/county/) or your local Conservation District office (www.conservaion.ky.gov/condistricts/). Personnel at either of these locations can help develop agriculture water quality plans and answer landowners' questions.

About the Author:

Amanda Abnee Gumbert is an Extension Water Quality Liaison at the University of Kentucky's College of Agriculture. She works in the areas of watershed protection, water quality, stream restoration, solid waste reduction/management, and is also a Kentucky Certified Environmental Educator.

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Arbor Day: Trees for Today and Tomorrow

By Peter Barber

The importance of trees became obvious to all by the end of the 19th century. Nearly every tree east of the Mississippi River had been harvested and the land cleared to make room for agriculture and rapidly expanding communities. Severe erosion and shortages in timber for construction and fuel threatened the prosperity of the nation, and in response, Theodore Roosevelt created the Forest Service. Well before this, people who lived in eastern towns knew the value of trees, especially trees within city limits. The planting of American elms was encouraged, and city streets were lined with these majestic trees. As settlers and pioneers moved westward, they brought with them the idea of planting trees for shade, fuel, and protection from wind. One of these settlers was J. Sterling Morton.

In 1854, Morton moved from Detroit, Michigan, to the Nebraska Territory. Upon arrival, Morton was struck by the lack of trees on the Nebraska

plain, and he immediately set about planting trees and other plants on his property. Morton became the editor of the territory's only newspaper, which provided him a captive audience to stress the importance of planting trees for conservation. The people took his ideas to heart, and his popularity led him to become the Secretary of the Nebraska Territory. This position gave his ideas even more weight, and one of those ideas was Arbor Day.

The first ever Arbor Day event took place on April 10, 1872. It was estimated that one million trees were planted during this celebration, which included a large parade, and a speech by Morton himself. A critical part of this huge success story is the involvement of schoolchildren; every child was to plant a seedling, cutting, or

seed, and prizes were awarded to individuals and counties who planted the most. By 1882, schoolchildren all over the country were planting trees in observance of Arbor Day. The Nebraska state legislature officially adopted Arbor Day as a state holiday in 1885, and it was held on April 22 thereafter, the birthday of J. Sterling Morton, in honor of his conservation efforts.

Kentucky adopted Arbor Day as an official state holiday in 1887. April 2 was the date chosen then, although it has changed and is now celebrated the first Friday in April. Again, schoolchildren were a key component to the success of these early Arbor Day tree planting events.

The catastrophic loss of the majestic American elms due to Dutch elm disease, and the near total loss of the American chestnut due to chestnut blight, highlighted the importance of trees for conservation. Today, Morton's ideas have been greatly expanded, due to research in the fields of forestry, arboriculture, and soil conservation.

Urban forestry is the science that pulls these other sciences together and applies them to the management of trees in our communities. New, modern-day standards were developed for tree planting and all tree care activities, which introduced even more ideas for tree conservation. The concept of planting the "right tree in the right place" is a mantra for urban foresters and arborists across the world.

What can you do to help with the conservation of trees in your community? The easiest way is to attend your local Arbor Day celebration. In Kentucky, local conservation districts and the Division of Forestry provide trees and educational materials on everything related to trees.



J. Sterling Morton

Photo courtesy:
Arbor Day
Foundation website,
www.arborday.org



**University of Kentucky's
Arbor Day celebration in 1890.**

Photo courtesy: University of Kentucky General
Photographic Prints Collection

Trees provide food, shelter, and homes for many types of wildlife*.

Tree roots help to stabilize the soil and increase infiltration of water into the soil which reduces erosion and flooding.*



One acre of forest absorbs six tons of carbon dioxide (CO₂) and puts out four tons of oxygen (O₂). This is enough to meet the annual needs of 18 people.*

Of course, tree planting events are still the main attraction, and many of these take place across Kentucky, some of which see several hundred volunteers planting thousands of seedlings. Children are still heavily involved with these activities, just as in the old days. Schoolchildren in Kentucky and all over the country can also participate in a poster contest for Arbor Day, and the winners of this contest receive everything from a cash prize, formal recognition, and a tree planted in their honor at the National Arbor Day Farm in Nebraska.



University of Kentucky's Arbor Day celebration in 1915.
Photo courtesy: University of Kentucky General Photographic Prints Collection

Another great way to get involved is to encourage your community to become a Tree City USA. This nationwide program, created by the Arbor Day Foundation, recognizes communities that meet basic standards for managing their urban forest. These communities provide opportunities for citizen involvement through an official tree board or urban forestry department, which sponsors educational events along with the annual Arbor Day celebration. Learn about other ways to celebrate

Trees around your home can increase its value up to 15% or more.*

Arbor Day by visiting the National Arbor Day Web site at www.arborday.org, or contact your local forestry office or tree board. There is no greater good than planting a tree, so plan to do your

part. Take care of the trees on your property, become involved in Arbor Day events, and remember J. Sterling Morton's motto: "The cultivation of trees is the cultivation of the good, the beautiful, and the ennobling of man".

** More information about the value of trees in your community can be found at www.arborday.org/trees/benefits.cfm*

Shade trees properly placed around buildings can reduce air conditioning needs by 30 percent and can save 20 - 50 percent in energy used for heating.*

About the Author: _____
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"To exist as a nation, to prosper as a state, and to live as a people, we must have trees."
— Theodore Roosevelt

Part of a wood gasification system, this plant has been in use over 10 years by Burke-Parsons-Bowlby in Stanton, Kentucky. The plant uses stored sawdust which is heated at a controlled rate and releases methane gas. This gas is then piped to a boiler and ignited. The hot water from that boiler is then used to heat dry kilns and wood treating chemicals.

Woody Biomass, an Emerging Market

Photos courtesy: Terry Conners

Editors Note:

High oil prices and concerns over national security have brought about a resurgence of interest in turning wood into energy. Technology now allows us to think about woody biomass fueling cars, powering industries, efficiently heating our homes. In Kentucky we have two predominant sources of woody biomass: residues from sawmills and wood industries, and parts of trees left in the woods after a sawtimber harvest. Residues from traditional timber harvests could potentially be sold as biomass and efforts are underway in Kentucky to determine the economic costs and benefits of using these residues for fuel. Analysis of woody biomass fuels in Arkansas indicates that the fuel industry can pay more for woody biomass than is currently being paid for pulpwood. To help ensure that woodland owners are up to speed on this potential market the Kentucky Woodlands Magazine is providing a series of short articles on woody biomass that will run in the next several issues.

By Terry Conners

Communities all across the nation are finding that increasing populations mean increasing energy demands, and oftentimes the energy supplier is an ocean away. Here in Kentucky we have an abundant supply of coal for electricity, but some people have questioned whether we should seek out alternatives to fossil fuels to meet at least some of our needs. In recent years, several ideas have been proposed to turn wood into a clean, renewable energy supply. Not every method is going to work equally well; some methods can be implemented for homes and small businesses, and some are practical only for larger facilities. All will require guaranteed wood supplies. This article will provide you with a basic understanding of what wood energy is all about, and introduces some important concepts behind using wood for energy.

Why Is There Interest in Generating Heat and Power from Wood?

“Biomass” is a term used to describe plant materials, especially plant materials that can be converted to some form of energy or fuel. Biofuels (fuels made from biomass) are attractive sources of energy because they don’t come from fossil fuels; because they’re renewable, they are thought to be “carbon-neutral.” This phrase means that the carbon released when these materials are finally used for energy is absorbed at about the same rate by the plant materials grown to replace what is used to begin with. Wood is one kind of biomass that has interested people, but there are other kinds of plant materials that might be used as well. You have probably heard about converting corn to ethanol, for example, and some people have been working on energy projects involving switchgrass as well. The federal Biofuels Initiative, “30 x ‘30,” calls for producing 30 percent of this nation’s energy from biomass by the year 2030. Some of this energy may come from converting chemicals like starch or cellulose from corn or trees to alcohol, but wood can also be used to generate heat and power through combustion.

Interest in using wood for energy stems largely from the fact that wood is a locally produced, renewable resource that is readily available in many parts of the United States. Wood can be stored in many forms—firewood, chips, and even pellets—making wood available for use year round. It has the potential to play an important role in reducing our country’s dependence on oil, and there is a great deal



of interest in how to make this practicable in both industry and government. Even the most enthusiastic proponents of woody biomass as an energy source acknowledge that it does not represent a silver-bullet solution to our energy quest. No one solution (such as solar energy, increased efficiency, nuclear energy, biodiesel, or wood) can solve our energy challenges alone; it is more productive to look at each potential source as a piece of the puzzle. The question is not about which one of these energy alternatives we should use, but rather how we can utilize all of the feasible alternatives in combination.

How Do I Know If a Wood-to-Energy Facility Is Right for My Area?

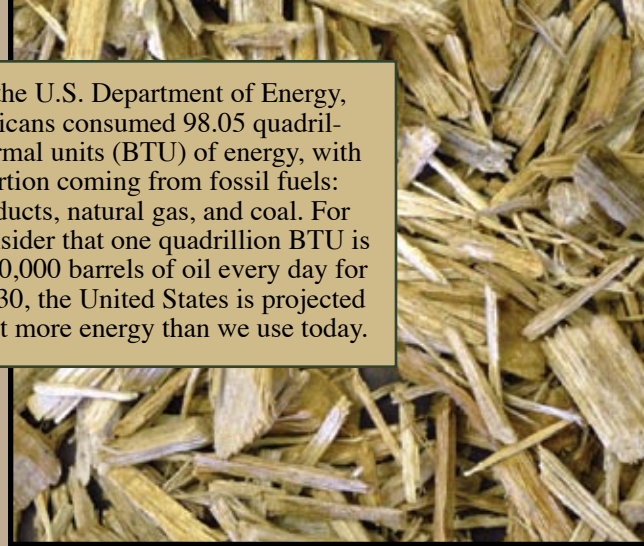
Before loggers can start thinking about delivering woody biomass from a harvesting operation and before woodland owners can start thinking about making a profit from biomass a market must exist. Successful, sustainable markets involve long-term commitments from both buyers and sellers, and both sides must make money. The following questions can help you decide whether woody biomass might have a future as an energy source in your area.

1. Is there sufficient woody biomass supply? Is it available in sufficient quantities? Biomass can come from harvesting operations or as by-products from wood industries such as sawmills or furniture manufacturers, but regardless of the source, when it is used for energy, it has to be available year round in consistent amounts. The source of biomass used for energy has to be fairly close to the power generating facility; otherwise, the cost of hauling it will approach the energy value of the woody debris.
2. Some biomass is available from conventional sawtimber harvests and forest practices such as timber stand improvement or from municipal tree removals and so on. In some areas these sources might generate enough material to sustain continuous power generation. In other areas this might not be the case, and it must be determined whether the community would be willing to support landowners who might choose to grow fast-growing trees exclusively for energy use to provide a dependable source of woody biomass for an energy facility (an "Energy Farm"). Is sufficient land available for an Energy Farm?
3. Are the economics of obtaining the woody biomass attractive? Even though some "waste" material is inevitably produced by local wood industries such as sawmills, these materials still have value for other uses; they may be used on-site for heat generation, for example, or they may be sold to other companies for use as horse bedding, mulch, or pulp chips. What is needed is an abundant, clean, and reliable source of unused wood.
4. Is there an increasing demand for power or steam locally? Is an industrial park or new municipal building in your community's plans? Are there power facilities in your area that can sell electricity on the grid? If conversion of biomass to alcohol is contemplated, a community will need an ample supply of water and good transportation access.
5. Are investors interested in erecting the power generating or conversion facilities required?



Electric substations like this one in Winchester, KY are common sights, indicative of our state's need for power for residential and industrial uses.

According to the U.S. Department of Energy, in 2004 Americans consumed 98.05 quadrillion British thermal units (BTU) of energy, with the largest portion coming from fossil fuels: petroleum products, natural gas, and coal. For comparison, consider that one quadrillion BTU is equivalent to 470,000 barrels of oil every day for one year. By 2030, the United States is projected to use 34 percent more energy than we use today.



Wood chips like these can be used for paper, playground surfaces, mulch – and potentially energy.

How Do I Find Out More about Using Wood to Produce Energy?

There are a number of important questions that each community should discuss before deciding to use wood to generate electricity, combined heat and power, or alcohol. Sources of wood, cost of wood, competition from other fuels, competition for wood, transportation, sustainability of forests, economic impact of using wood, and how the wood is converted to energy may be some of the issues to explore. Other articles in this series will discuss some of these concerns as we learn about the potential for converting wood to energy here in Kentucky. Additional information is also available at <http://www.forestbioenergy.net>.

Thanks to Martha C. Monroe, Associate Professor and Richard Plate, Outreach Research Associate, School of Forest Resources and Conservation, University of Florida, Gainesville, Florida, for their contributions to this article.

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Forest Health



Invasive Plant Hit List: Garlic Mustard

by Jeff Stringer and Thomas Barnes

Garlic mustard (*Alliaria petiolata*) is a fast-growing (biennial) herbaceous broad-leaf weed from Europe, first reported from Long Island in 1868. This species is now a common invasive exotic. It is a habitat generalist occurring in agriculture, rights-of-way, and disturbed and undisturbed hardwood forests. It invades the understory of many woodland types and quickly carpets the forest floor.

The invasive nature of the species is characterized by self pollination and abundant seed production. Seeds are dispersed by water, wildlife, and humans through mowing, automobile tires, and muddy shoes. It can rapidly colonize any site resulting in the loss of native species including spring ephemerals, woodland flowers, and other important understory species. Typically, movement is enhanced by activities that scatter seed like mowing or clearing ground. It can grow on a wide range of soils and sites but does its best on highly productive soils. Most hardwood forests are at risk from invasion, particularly if they have rivers or streams running through them, are located next to roads or agricultural land, or have foot, horse, or vehicle trails/roads.

Identification and Life Cycle

Identifying garlic mustard and understanding its life cycle will help to develop a successful control plan. Garlic mustard is a cool season biennial herb and the first year vegetative plant is characterized by a rosette of triangular heart shaped coarsely toothed leaves growing close to the ground (Fig. 1). Rosettes remain green through the winter and are one of the few herbs with green leaves this time of year. During the second year the rosettes produce a two to three and a half foot tall green flower stalk in April into early May (Fig. 2). The flower stalks contain numerous small clusters of white cross-shaped flowers (typical of the mustard family) that ripen quickly into slender shiny black pods. Some native herbs also produce white flowers on similarly sized stalks such as cresses, toothworts and saxifrage and may grow in the same general area with garlic mustard but these native species have very different basal leaves. The plants die by late June and the brown seed stalks remain visible and will hold viable seed throughout the remainder of



Photos courtesy: Jeff Stringer

Figure 1: First year invasion of garlic mustard in a Kentucky woodland (above). Close-up of first year garlic mustard basal rosette in March (left).

the growing season. The seed can remain viable in the ground for two years and in some cases up to six years.

Woodlands at Risk

As with most invasive species, preventing or reacting quickly to invasion is critical. Once garlic mustard is well established it can harm native plants. Scout for garlic mustard in the fall or early winter when the basal rosettes are clearly visible. It is most probable that the invasion will occur along edges of the woodlands, woodland trails and roads, areas next to rights-of-way or fields and along rivers or streams and you should regularly scout these areas. However, it can quickly spread and you are likely to find plants far away from these sites. Ground that is highly productive is also most likely to be at risk for invasion.

Control

Effective control means reducing or hopefully eliminating garlic mustard plants with little impact to native co-occurring species. Because it is a biennial with seeds that remain viable for several years, control is required for a number of years. Hand pulling individual plants may be possible in the earliest stages of an invasion. If you pull individual plants, make sure to get the deep, straight, tap root fully removed and create as little disturbance to the surrounding area as possible.

Garlic Mustard

Kentucky Forest Health Task Force

If hand pulling is not possible, mowing or herbicide application at the correct time is critical to minimizing the loss of native species and to control this weed. If mowing is used, allow seed stalks to grow approximately one foot tall and mow BEFORE flowers mature and produce seed. Repeated (typically two or three years) of this type of mowing is required. However, mowing at this time of year can also result in the loss of native species.

Herbicides can be effective in killing garlic mustard but these herbicides will also kill native broadleaf herbs. Judicious use of a herbicide is recommended only when individual plants can be spot sprayed without contacting adjacent native plants or when garlic mustard plants fully cover the area. The best time to apply herbicide is during the dormant season (fall through very early spring) prior to the emergence of spring ephemeral wildflowers. Label rates state that foliar applications of broadleaf herbicides should be applied when temperatures are above 50 degrees during the day. Limited research and experience has shown glyphosate to be one of the best options. Other herbicides such as 2, 4-D that are somewhat less harmful to grasses or other native plants have been found to be somewhat effective. Because this is a biennial, any herbicide will need to be applied in successive years and always follow up any treatment by scouting the area and retreat if necessary.

The key to controlling this species is to stop seed production. By stopping seeding for several years the invasion can be slowed and potentially stopped.



Figure 2. Mature, two-year-old garlic mustard in bloom (May).

Photo courtesy: Chris Evans, River to River CWMA, Bugwood.org

Table 1. Control methods for garlic mustard (*Alliaria petiolata*)

Method	Timing	Details and Cautions
Hand pulling	any time	Make sure entire long tap root is removed. If seeds are present, bag the flower/seed stalks.
Mowing weed eating	early to mid spring	Allow flower stalks to emerge 1 foot tall and cut prior to seed development. Do not mow after seeds have developed. Mowing rosettes in fall or winter will not kill the majority of the plants.
Herbicide ¹ glyphosate	fall to late winter and early spring	Foliar applications of 2% glyphosate. Accord is labeled for use in woodlands. Use other glyphosate products for other areas ² . For later winter or early spring applications make sure spraying is early enough or directed spray to avoid spring ephemerals.
Herbicide ¹ 2, 4-D /triclopyr	fall to winter	Foliar application 1 to 1.5% Crossbow. Avoid native plants. Can not be used in areas designated for timber production.
Herbicide ¹ 2, 4-D	fall, winter, early spring	Foliar application 1 to 1.5% of 2, 4-D herbicide. May require multiple applications.
¹ Other herbicide brands can be used for garlic mustard. The herbicides that are listed are those that have been used regionally. ² There are a large number of brand names for glyphosate herbicides. Many are for use in fields or fence rows. Few such as Accord are labeled for use inside a forest (see Kentucky Woodland Magazine 1(1) for more information on glyphosate herbicides).		

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www.KyForestHealth.org



Marrowbone Creek State Forest

A Wealth of Resources

by Lynn Brammer

Marrowbone Creek State Forest recently became Kentucky's seventh state forest. The newly acquired property is located on the Metcalfe and Cumberland county line and is centrally located to other natural areas including Mammoth Cave National Park, Green River Lake State Park, Lake Cumberland State Park, Dale Hollow Lake State Park and Barren River Lake State Park. Visitors to the forest will find a wide variety of habitats that support diverse plant and animal communities.

The tract is located in a transitional area and has a diversity of forest types. Tree species that are typical of mixed-mesophytic forests, including oak, hickory, elm, walnut, tulip poplar, white pine, and hemlock are common to the area. The variety of habitats—from grasslands to early-successional woods to mature forests—provide forage and nesting sites for many bird species including wild turkey, ruffed grouse, red-cockaded woodpeckers and broad-winged hawks. Neotropical songbirds likewise benefit from the different successional stages of the forest and are prevalent in the area.

The property also contains over nine miles of tributaries in the Green River and Cumberland River watersheds. Riparian areas, the buffer zones along these watersheds, are critical to the survival of many species located in this area. The Green River watershed is the fourth most biologically diverse aquatic ecosystem in the United States and is home to 151 species of fish and 71 species of mussels. The presence of two federally-endangered bats, the Indiana bat and the gray bat, add further significance to this property and the need for conservation and proper management.

The quality of resources on the property has a great deal to do with a long history of forest stewardship and wildlife management. The land has been an active stewardship forest since the 1970s and was the Tree Farm of the Year in 2003. The previous landowner, Judge Daryl Coffey, worked extensively with the Kentucky Division of Forestry, the Kentucky Department

of Fish and Wildlife Resources, and the Natural Resource Conservation Service for over 30 years. The division manages state forests and stewardship properties, like Marrowbone Creek, using the ecosystem management approach. This approach ensures the health and diversity of forest resources while allowing sustainable use by humans. Various conservation techniques include planting trees and wildlife food plots, providing wildlife habitat with non-invasive plant species, and maintaining healthy riparian zones. The division also protects forest resources by suppressing forest fires, conducting surveys for potential insect and disease threats, monitoring for invasive plants, and inspecting timber harvesting practices for water quality.

Education is perhaps the most important aspect of the state forest program. Proper stewardship practices and best management practices are demonstrated on the properties for the purpose of increasing landowner, logger, and public awareness of the benefits of forests. The division's history with Marrowbone Creek, for example, shows how proper management has improved the production of timber. This is seen in the maturing pine plantations and converted fields. Further evidence is seen in the early-successional woods where timber stand improvement techniques, such as thinning overcrowded trees and removing damaged and undesirable tree species, have allowed more desirable species of trees to thrive.

All of our state forests contain outstanding resources including timber, terrestrial, and aquatic habitat and biological diversity. Fortunately, through federal and state funding, the Kentucky Division of Forestry has been able to acquire and purchase these properties. The purchase of phase I (1,125 acres) of Marrowbone Creek was completed in December 2007, and the purchase of phase II (625+ acres) is planned for 2008 in conjunction with the Kentucky Department of Fish and Wildlife Resources. With the addition of Marrowbone Creek, the division now owns and manages seven state forests totaling 38,210 acres.

Funding for the purchase of Marrowbone Creek was made possible through the USDA Forest Service's Forest Legacy Program and the Kentucky Heritage Land Conservation Fund. The Forest Legacy Program is a federal program that works in cooperation with state foresters to acquire property, secure conservation easements, and protect environmentally sensitive forest lands. The Kentucky Heritage Land Conservation Fund is financed through the sale of nature license plates in which funds are used to purchase natural areas and protect them from development.

Marrowbone Creek State Forest will officially open to the public in spring 2008. The Division of Forestry is currently marking boundaries, setting up trails, and preparing parking areas for public use. The forest, like all state forests, will be open to the public for hiking, fishing, wildlife viewing, and regulated hunting.

For more information about Marrowbone Creek and other state forests, visit the division's Web site at www.forestry.ky.gov/programs/stateforest



Marrowbone Creek State Forest

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Forestry 101

Forestry for Woodland Owners

Reading Your Forested Landscape

By Doug McLaren

How many of us have either heard or used the saying, “I know it like the back of my hand”? Many of us who are seasoned managers of our own woodlands believe that we have this comfortable understanding of our wooded acreage. Many new owners developing their first woodland management plan may not have the same comfort zone of looking across the landscape and being able to understand the extreme diversity that can be found in our Kentucky woodlands.

There is much to be understood about tree growth, species selection, and management options when visiting stands growing on the different slopes or relative elevations on the landscape. An example of tree selection based on location would be the species of chestnut oak, hickory, and Virginia, shortleaf and pitch pine. These are normally found on the higher slopes and have adapted their growth due to the thinner soils and lower moisture contents.

In contrast, black walnut, sycamore, buckeye, hemlock, beech and yellow-poplar have filled the niches where deeper and moister soils exist along most stream systems throughout Kentucky. If you spend much time on west- and south-facing slopes, which are referred to as the aspect of the landscape, you will find the environment is heated during the daylong exposure to sunlight, and again dominated by many oak and hickory stems. On the opposite aspect, the east- and north-facing slopes, normally faster growth can be expected due to the cooler and moister conditions. In small drainages of your woodlands, you will find a mixture of species due to the varying degrees of the deposition of soil and retention of moisture.

Occasionally as you cross the landscape, you may find a small grouping of sassafras. In many situations, this indicates that this area was a field or pasture at a previous time. Without any cultivation of these old fields, these pioneer species of trees have taken a foothold on the land. Finding an extensive stand of pure yellow-poplar, you can assume that an old field existed previously, and the existing surrounding yellow-poplar with windborne seeds has naturally seeded this area. Finding any tree species that exist in well-defined rows indicates the influence of



Photo courtesy: Thomas Barnes

humans in attempting to convert a previous old field to woodlands by planting trees of a desired tree species.

Should a woodland owner learn to read these forested landscape indicators? Definitely yes! By understanding what tree species are growing in what locations, the land manager of the woodlands can better decide where to use their limited resources of time and money. More revenue and production can be achieved from your woodland management plan by allocating resources to the more productive areas.

Reading the forested landscape can be done by inventorying your woodlands in small groupings. If you join each of the similar groups of tree species and environmental characteristics together, you will find that management becomes an easier process while looking at your woodlands one acre at a time.

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Sustainable Forestry for Kentucky

Photo: University of Kentucky, by Forest/2011



78% of Kentucky's woodlands are owned by private landowners.



Timber harvesting helps maintain the wide variety of forest types required by Kentucky's diverse wildlife populations.



Kentucky's forests are dominated by naturally regenerating hardwoods such as oaks, maples, hickories and yellow-poplar.

The Sustainable Forestry Initiative Promotes

*Wildlife and
Water Quality*



Environmentally Sound Logging



*Forest Health and the
Control of
Invasive Species*



TREE-OF-HEAVEN

*Forest
Aesthetics*



*Promoting Sustainable Forestry in Kentucky
through the Kentucky State SFI Implementation
Committee.*



Photo courtesy: Jeff Yanuga, USDA NRCS

Windbreaks is the fourth of a five-part series of Agroforestry articles. Agroforestry also includes the following practices: alley cropping, riparian buffer strips, silvopasture, and forest farming. See Kentucky Woodlands Magazine Vol. 1 Issue 2 for more information.

Non-Timber Forest Products

Agroforestry Part Four: Windbreaks

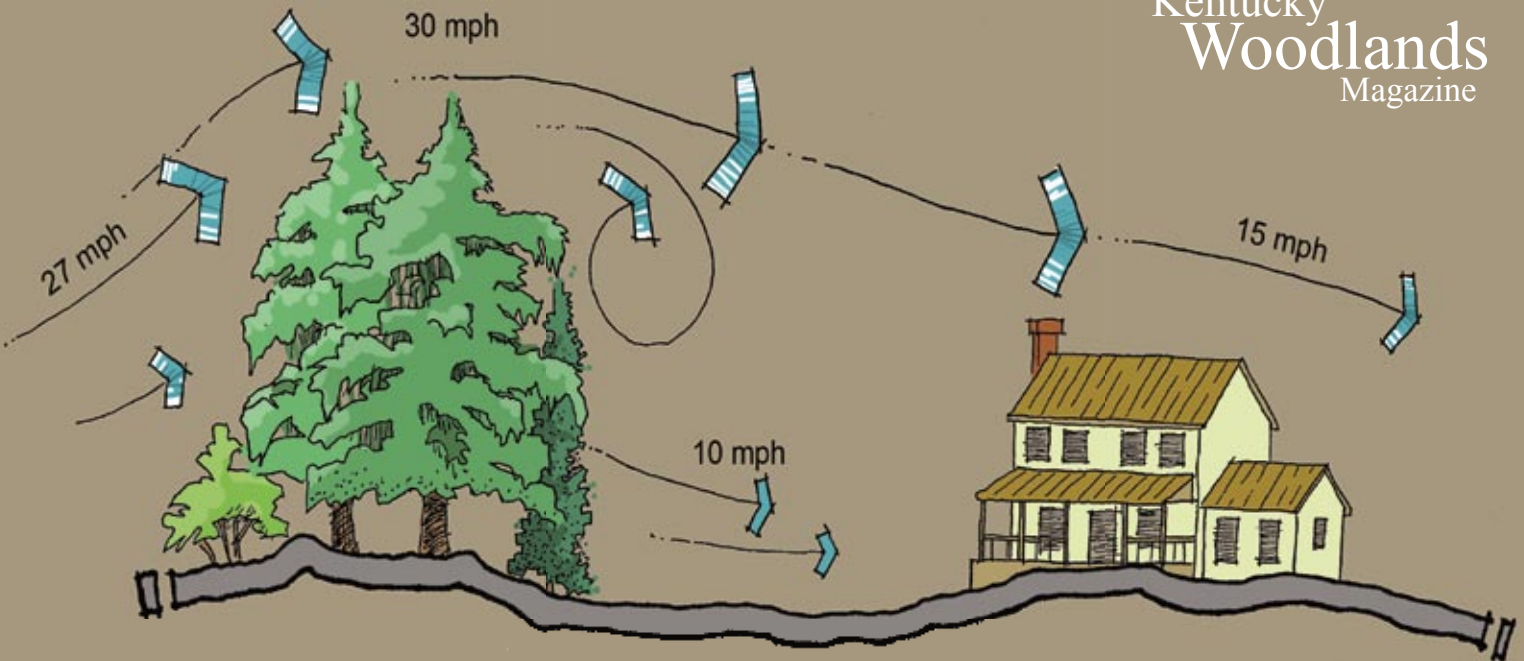
By Deborah B. Hill

In this fourth of the series on agroforestry, we will look at windbreaks. Windbreaks were first used extensively in the United States in the 1930s, after the Dust Bowl days made it clear that certain agricultural practices tended to facilitate the loss of topsoil by wind erosion. In order to protect those same lands, the then Soil Conservation Service (now Natural Resources Conservation Service, or NRCS) recommended that landowners plant rows of multi-species trees, creating a barrier to prevailing winds. Such barriers reduced the amount of transpiration from the crop plants and therefore increased crop yields on the protected lands. Since those days, windbreaks have been grown largely in open areas like prairies, but they are certainly a practical agroforestry technique in any location where there are significant prevailing winds. Windbreaks have been used to manage snow, improve irrigation efficiency, screen views and reduce noise, protect farm crops and farm buildings, protect free-ranging livestock, provide wildlife habitat, and provide some non-timber forest products (e.g., berries, woody florals).

The mixture of tree and shrub species for windbreaks should include at least one row of coniferous trees so that there will be some trees that hold their foliage throughout the year. Most commonly, windbreaks are three to seven rows in depth. Coniferous trees will provide the greatest density to reduce wind speed, and inclusion of a variety of deciduous tree species adds diversity and may give needed height in a shorter period of time. The outside rows should be shrubs (similar to the pattern for riparian buffer strips, discussed in the last issue of this magazine). Shrubs can also be chosen for diversity, to create dense foliage closer to the ground surface than the tree species, and to provide some marketable non-timber forest products or wildlife food such as berries.

There are seven features that are important for an effective windbreak (and the purpose of a windbreak is literally to “break” or diminish the power of the wind, not to stop it altogether).

- **Height:** Often 30 to 60 feet when mature. The effectiveness of the windbreak is measured in “H’s”, referring to height. A desirable effective zone is 20 to 30 H’s.
- **Density:** 60 to 80 percent is most desirable. In this case, more is not necessarily better.
- **Orientation:** The rows should be planted perpendicular to the prevailing wind direction during the growing season, when crops will be most susceptible.
- **Length:** The rows should be 10 times longer than they are tall, so if you are planning on a 60-foot height in the tallest rows, the row should be 600 feet long.
- **Width:** This depends on the number of rows, but there is no further value if the windbreak is wider than 5 H’s; five rows may be optimal.
- **Continuity/uniformity:** Windbreaks will be most effective if there are no gaps. If it is essential to have a path through the wind break, it should be at an angle so that the



It is important to remember that windbreaks are to “break” the wind, not to eliminate it altogether; around 80 percent effectiveness is optimal. Forcing prevailing winds to go over the windbreak both increases its speed and creates some turbulence on the downwind side of the break. The positive effects of a windbreak extend hundreds of feet beyond it and help retain moisture in crops by reducing evaporation caused by wind, or reduce heating/cooling costs in buildings.

wind cannot just funnel through the opening.

- **Cross-sectional shape:** With tallest trees in the middle rows, the shape is usually triangular, with shorter trees and/or shrubs on the outsides.

What kinds of trees should you plant? You want trees that are preferably native to the area, fast-growing, long-lived, with dense crown development and that are resistant to both disease and breakage. If you want your windbreak to provide economic benefit itself in addition to the protective role it is playing, select tree and shrub species that can provide another commodity.

Windbreaks are a long-term project. Establishing one will take several years. The year prior to establishment, you should prepare the site for tree planting, and either mulch or use some kind of weed barrier or chemical control in the first few years to give the tree species the best opportunity for survival. Replace lost trees in the first three years. Make sure the trees are spaced in such a way that you can mow or otherwise manage between the trees with your own equipment. Protect the new seedlings from livestock browsing or trampling.

Spacing for the trees is usually six to 15 or 20 feet within rows (conifers a little closer to each other than hardwoods) and 12 to 16 feet between rows. Shrubs are planted 3 to 6 feet apart within rows. Also leave a clear zone (native grasses or forbs) of 20 to 50 feet on either side of the windbreak between it and the crops.

Care for a windbreak is much the same as for any crop. Keep the young trees and shrubs as weed-free as possible while they are becoming established, monitor for insect and disease problems on a regular basis, and treat as needed. Harvest non-timber forest products when they are ready if they have been included in the species mix.

Growing windbreaks to protect crops and livestock has been shown to have a significant positive impact on crop yields and on general health and weight gain of livestock. Placing windbreaks around buildings reduces indoor climate costs (heating/cooling), filters airborne pollutants, and reduces noise.

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Photo courtesy: Jeff Stringer

Loggers and certification auditors discussing holding wood used in chainsaw felling.

Certified Master Loggers

In December 2007, 40 logging firms in Kentucky and Tennessee were certified by the newly developed Certified Master Logger program. This certification means that these logging firms have passed audits of their operations to ensure that they are using good logging practices and conducting business according to 39 separate logging standards set by the Certified Master Logger program. These standards include provisions to protect the environment, abide by all laws including safety and worker's compensation, use harvest plans, protect standing timber, adhere to contracts, track wood shipments and use good business practices.

This certification program is compatible with the long-standing Kentucky Master Logger (KML) program that provides training and education to individual loggers. In this case, the Certified Master Logger program certifies that logging firms are using what is taught in the KML classes. It is important to note that there are many good logging firms in Kentucky, a large number of which are not certified. The difference between good loggers that are not in the program and the certified logging firms is a formalized certification process that includes passing periodic and spot audits of their operations.

The program was developed due to market pressures for certified wood and paper. Wood supplied by these loggers is recognized as fiber from a point-of-harvest certification system.

Firms that buy paper and wood products are increasingly on the

lookout for certified wood, and this program provides Kentucky with a means of helping satisfy some of this market demand. The program will help improve the competitiveness of loggers and Kentucky's forest industry in a global market. In today's business climate, "green" is in. Proving that you are conducting business in an aboveboard and environmentally sound manner is becoming increasingly important, and certification is here whether we like the cost of it or not.

At the beginning of 2008, the certification program was third-party audited by Rainforest Alliance's forestry division (called SmartWood) for compliance with its SmartLogging standards. Upon completion of this audit, the Certified Master Logger program will itself bear the stamp of certification by the Rainforest Alliance, a globally recognized green certifying body.

Jeff Stringer, Cooperative Extension faculty at the University of Kentucky's Department of Forestry and director of the KML program, conceived of and developed the Certified Master Logger program that is a partnership venture with the KML partners (the Kentucky Division of Forestry, Kentucky Forest Industries Association, and the UK Department of Forestry Extension). Instrumental in piloting and implementing the program were Ken Negray, certification manager with NewPage Inc.; Mark Schuster, Kentucky Division of Forestry forester and coordinator of the Kentucky Master Logger program; and Scott Shouse, consulting forester and certification specialist.

Currently, the program includes logging firms that operate in western Kentucky and Tennessee, primarily because NewPage Inc., a large pulp and paper company with a mill located in Wickliffe, Kentucky, is backing the program and providing assistance to certified loggers. However, the program is designed to be used by any logging firm in the state, and other logging firms can voluntarily apply to enter the program. Some may do so if other forest industries provide market incentives or if other financial incentives develop, such as a reduction in worker's compensation rates for certified loggers that is currently being considered.

For a list of certified loggers, contact your local Cooperative Extension office or go to www.masterlogger.org.



Photo courtesy: Ken Negray

Jeff Stringer, program director goes over harvest plans and contracts during a training program.

Test Your Knowledge

A.

Photo courtesy: Dave Hanson, Department of Forest Resources, University of Minnesota



Was I in the sun too long because I look like I'm peeling? Actually, I'm supposed to look like this. In the forest, I am normally found growing along streams and in urban areas, my multi-stem cousin has gained much popularity. My bark is my most distinguishing characteristic, any idea what I am?

B. Photo courtesy: www.seedman.com



You may see me growing along fence lines or along the edge of the woods and most folks wouldn't recognize me unless I was in bloom. But once you see my breathtaking bloom, you'll never forget me. I can grow up to 30 feet long and I have medicinal properties that assist with controlling asthma. Do you know me?

C.

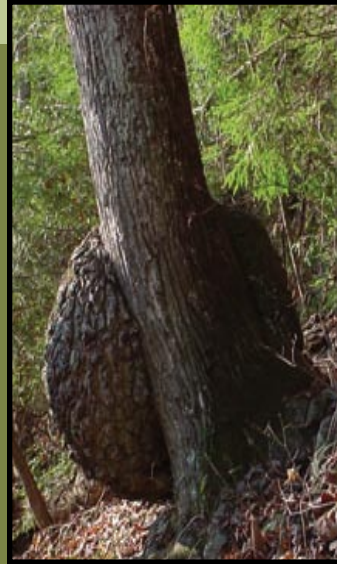


Photo courtesy: Susan Laursen

Is this tree pregnant or did it just swallow a boulder? I develop from one or more twig buds whose confused cells continue to multiply but never elongate into a limb. I come in all different sizes and can be found on many different kinds of tree species. On the positive side, I don't usually cause harm to trees and my wood is much sought after by specialty wood crafters. Do you know me?

Answers to Test Your Knowledge can be found on page 25.

Photo courtesy: Texas Forest Service Archive, Texas Forest Service, Bugwood.org

D.



I normally raise my fuzzy little head every year around early May and folks in northern Kentucky know me well. I don't normally stay in one site for long, however oak leaves are like Lays potato chips – can't eat just one. I don't make tents in the crotches of trees like my cousin, eastern tent caterpillar, but I'm more commonly found with my buddies hanging out on the trunk or stem of the tree. Many people recognize me by my blue racing stripes, do you?

E.

I lost some of my bark due to a "shocking" experience; I guess that's what I get for being the tallest tree in the yard. I wish there was a way to keep Mother Nature from getting up-close and personal, after all, no one likes being grounded. What caused my dilemma?



Photo courtesy: Complete Horticultural Consulting, LLC, www.CompleteHortiConsulting.com

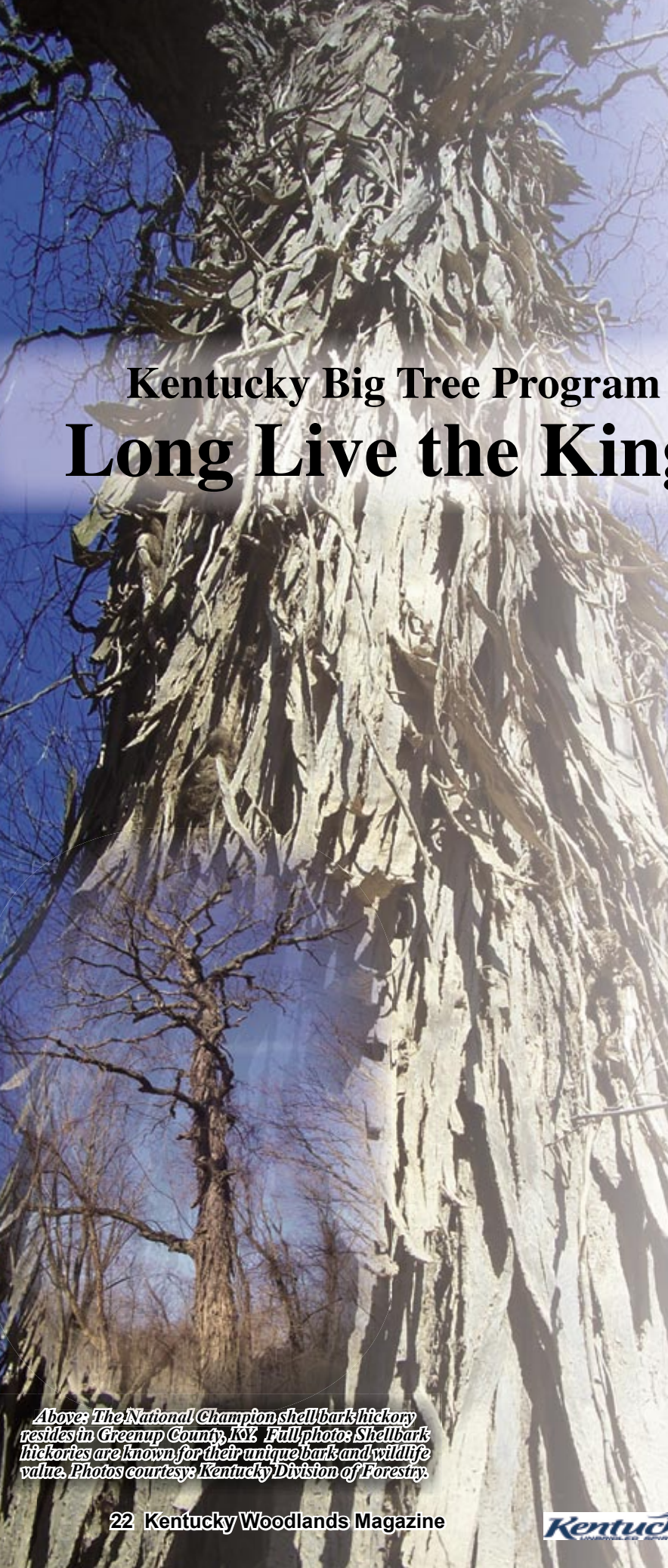


Photo courtesy: Steve Baskauf;
www.bioimages.vanderbilt.edu

The nuts of the shellbark hickory are the biggest of all hickories.

Kentucky Big Tree Program Long Live the King!

By Diana Olszowy

This tree is the epitome of every squirrel's fantasy—just think, a hickory nut that can grow to the size of a baseball! Measuring an impressive 14.5 feet in circumference and towering to 139 feet in height, this national champion shellbark hickory is the pride of Greenup County.

Officially, this tree is called a shellbark hickory, but it is also known as a kingnut hickory, bigleaf shagbark hickory, and about a half dozen other names.

The shellbark hickory is a bottomland hickory with limited distribution. Found almost exclusively west of the Appalachian Mountains, it can be considered as a more northern counterpart of the pecan. The bark is shaggy like its cousin, shagbark hickory, but it tends to twist off the trunk instead of curling, giving it a rough, blistered look. The leaves are massive, up to two feet long and usually with seven leaflets. The terminal leaflet is up to nine inches long! These huge seven-leaflet leaves and its giant nuts easily distinguish it from its cousin, the five-leaflet shagbark hickory.

The nuts of shellbark hickory are sweet and edible and the largest of all hickories. They are eaten by a wide range of species, including squirrels, ducks, quail, turkeys, chipmunks, deer, foxes, raccoons, and people. The wood is hard, heavy, strong, and very flexible, making it a favored wood for tool handles. The hardness and beauty of the grain also make it desired for furniture, cabinets, and veneer. Historically, the sap was tapped and boiled down to make syrup (similar to maple syrup), and the nuts were crushed to make "hickory milk," which was a staple in the diet of Choctaw and Chickasaw Indians.

Shellbarks prefer wet, fertile bottomland soils of rivers and creeks and soils that can remain underwater for several weeks at a time. The national champion in Greenup County is no exception.

About the Author:

Diana Olszowy is Stewardship and Education Branch Manager with the Kentucky Division of Forestry. She is also an editor of the Kentucky Woodlands Magazine.

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Above: The National Champion shellbark hickory resides in Greenup County, KY. Full photo: Shellbark hickories are known for their unique bark and wildlife value. Photos courtesy: Kentucky Division of Forestry.

Local Forestry Organizations in Kentucky

by Billy Thomas

Local forestry organizations (LFOs) are having a positive influence in Kentucky by creating "platforms" to deliver targeted forestry and natural resource educational programs and addressing locally important forestry issues. One example of how LFOs can work to address local forestry issues is the way in which a LFO recently worked with local loggers and the local wood industry to prevent a proposed road bond ordinance for loggers. The ordinance could have proven harmful to local loggers, woodland owners, and the local wood industry.

Some LFOs are working on wildlife management issues, while others are exploring ways to bring people together with an interest in forestry, especially woodland owners and loggers. Given the critical relationship between loggers and woodland owners, several LFOs have expressed interest in developing educational programs that provide continuing education credits to Kentucky Master Loggers as part of their LFO meetings. This concept provides an excellent opportunity for LFOs to strengthen the relationship among those with a vested interest in Kentucky's woodlands. These programs can be designed to provide meaningful educational material to woodland owners, master loggers, and those with an interest in forestry-related issues. Potential topics could include timber trespass, forestry best management practices, logging contracts, or other topics that are locally important.

If you are part of a LFO, thank you! If not, we encourage you to get involved in an existing one or help to form one in your area. There is a tremendous amount of support available to assist the LFO effort across Kentucky, but to be successful, LFOs require grassroots involvement from people like you. LFOs need to be issue-driven to be successful, and those issues must be locally identified by local people. Being involved in a LFO is a great way to have a positive influence on your community and the state.

A Web page and a series of fact sheets related to LFOs are available at www.ca.uky.edu/forestryextension/LFO.php or by calling 859.257.7597 for more information.

About the Author:

Billy Thomas is an Extension Forester with the University of Kentucky Department of Forestry. He works primarily on non-industrial private forest issues and is the associate editor for the *Kentucky Woodlands Magazine*.

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LFO Supporting Organizations:

UK Forestry Extension:

859.257.7597 -- www.ukforestry.org

County Extension Agents:

www.ca.uky.edu/county

KWOA: 606.876.3423

www.kentuckywoodlandownersassociation.com

Kentucky Division of Forestry:

502.564.4496 -- www.forestry.ky.gov

Kentucky Division of Conservation:

502.573.3080 -- www.conservation.ky.gov

Kentucky Farm Bureau:

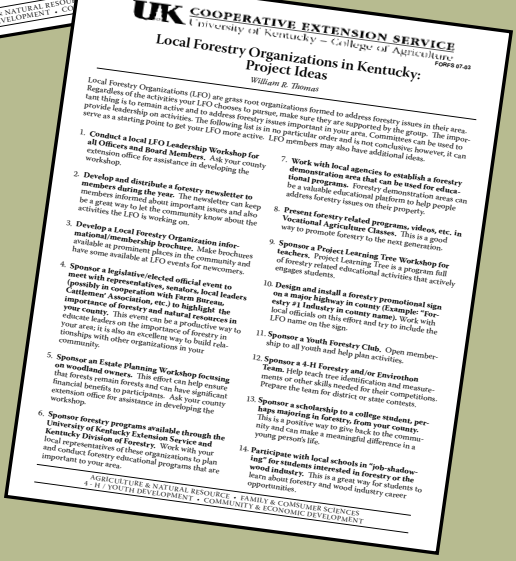
502.495.5000 -- www.kyfb.com

Kentucky Forest Industries Association:

502.695.3979 -- www.kfia.org



This series of fact sheets can be found at www.ca.uky.edu/forestryextension/LFO



Kentucky Woodland

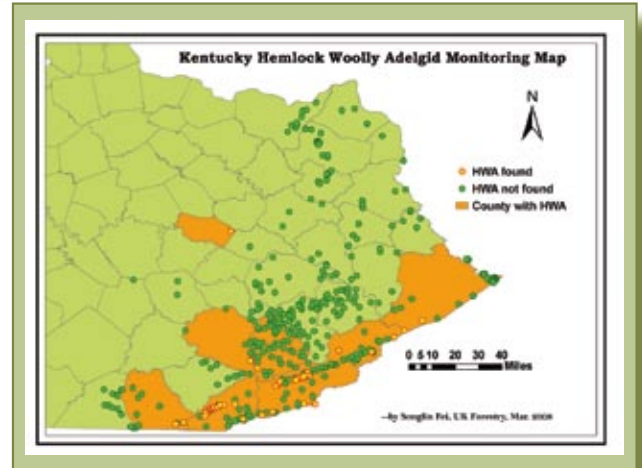
Hemlock Woolly Adelgid Update

Since its initial discovery in Harlan County in 2006, the Hemlock Woolly Adelgid (HWA), *Adelges tsugae*, has now been found in ten Kentucky counties: Bell, Clay, Grayson, Harlan, Leslie, Letcher, Oldham, Pike, Powell and Whitley. HWA is most likely in several other counties but hasn't been found yet. It only attacks eastern hemlock trees.

Last year's low-level infestations have now become moderate to heavy infestations this year. Tree mortality has not been seen yet but is expected within a few years.

To date, some trees on state or agency-owned lands have been chemically treated with imidacloprid and two species of predator beetles have been released at selected locations. The two predator beetles are *Sasajiscymnus tsugae*, a tiny lady beetle, and *Laricobius nigrinus*, a derodontid beetle. Researchers are evaluating more predator beetles in hopes of future releases.

If you suspect HWA on your eastern hemlock trees, please call 1.800.866.0555, your local UK Extension Office or Kentucky Division of Forestry office to report it. You may also visit www.forestry.ky.gov/programs/health to learn more.



Kentucky Woodlot\$: Capture the Value Conference Available Online



The recently held Kentucky Woodlot\$: Capture the Value Conference represented the first time state agriculture leaders and woodland owners have met as a group to discuss common issues and emerging opportunities in the industry. The conference was held in February at The Center for Rural Development in Somerset. Some of the leading experts in the field of forestry were speakers at the conference. The conference, sponsored by 15 stakeholder organizations, explored the latest market trends on how to reach and “capture” the maximum value of Kentucky’s woodlands. The entire program was recorded and is available (including the PowerPoint presentations) by visiting http://www.centertech.com/outreach/ag/ag_conference.php. For more information call 606.677.6000.

Master Tree Farmer Coming this September

The Master Tree Farmer Program is an intensive educational program designed to introduce woodland owners to many of the topics associated with forest management. This year’s program will focus on risks and their management on woodlands including: forest health, invasive species, dealing with natural disasters, taxes, timber trespass and theft, and how woodland owners can mitigate these risks. Master Tree Farmer courses are the only satellite broadcasts of their kind for woodland owners throughout the South. Forestry professionals from universities, private and public organizations participate as instructors and presenters. The 2008 Master Tree Farmer Program will be held September 9, 16, and 23 at numerous locations across Kentucky. For more information call 859.257.7597 or visit www.ukforestry.org

Dates To Remember:

Don't forget to add these important dates to your calendar! Preregistration is strongly encouraged for all events.

Date:	Event:	Location:	Contact:
June 2 - 6	Kentucky Forest Leadership Program	Jabez, KY	859.257.2703
June 12 - September 23	Woodland Owners Short Course (see pg. 4)	various KY counties	859.257.7597
September 19 - 20	Kentucky Wood Expo	Madisonville, KY	502.695.3979
September 9, 16, 23	Master Tree Farmer	various KY counties	859.257.7597

For more information about these programs, visit www.ukforestry.org

News To Use

Woodland Owner Alert

Budget Cuts –

Possibly the Biggest Threat to Kentucky's Woodland Owners

One of the most important issues facing woodland owners in Kentucky is the reduction in funding for the Kentucky Division of Forestry (KDF). Budget cuts are at the state and federal level and this double punch will have tangible effects on service to woodland owners and the overall health and productivity of our woodlands.

State Budget Cuts:

The state budget cuts are significant and will require that KDF prioritize services to woodland owners. In recent months the following have been discussed:

- 1) Closure of both state tree nurseries.
- 2) Reduction in workforce from 216 to 201, including service foresters that assist woodland owners with forest management planning and technical assistance, and county ranger technicians that inspect logging operations and organize and direct local wildfire suppression crews.
- 3) Not replacing over 80 aged vehicles and over 30 pieces of forest fire fighting equipment.

The loss of nursery capacity could effectively cripple the state's ability to reforest surface mines, establish riparian buffer areas, and plant trees for timber production and wildlife habitat enhancement. The noticeable and cumulative effects of the state budget cuts will also be less technical assistance for woodland owners, less logging oversight and a decrease in the ability to effectively fight wildfires.

Federal Budget Cuts:

The proposed federal budget cuts are from a reduction in the U.S. Forest Services' (USFS) State and Private Forestry Programs including an approximately 80 percent reduction in Stewardship, Urban and Community Forestry, and Forest Health, as well as a 26 percent reduction in state wildfire suppression assistance.

The University of Kentucky Department of Forestry Extension and KDF produce the Kentucky Woodlands Magazine that receives significant funding from federal stewardship and forest health funds and is at risk of elimination. Other education activities such as woodland owner field days, workshops, and demonstrations will be cut back or eliminated. Further, a reduction in training and support for service foresters that work directly with woodland owners will occur.

These federal reductions will also hamper KDF's ability to deal with invasion from the emerald ash borer, hemlock wooly adelgid and a host of other forest health threats. Cuts in wildland fire suppression assistance, reduced equipment for volunteer fire departments and support for local Firewise programs are also in store.

The National Association of State Foresters that represents all state forestry agencies is asking for support to ensure that the USFS maintains State and Private Forestry funding for fiscal year 2009 at \$45 million for Forest Stewardship; \$36 million for Urban and Community Forestry; State Fire Assistance including \$50 million for Cooperative Fire Protection and \$95 million for Wildland Fire Management; and Cooperative Forest Health Management including \$53 million for State and Private Forestry and \$13 million for Wildland Fire Management. Kentucky gets its share of these federal funds and maintenance of the funding levels suggested above will allow KDF to maintain appropriate service to the commonwealth and woodland owners.

This federal funding recommendation would allow USFS to keep its commitments to the states; fund much needed forestry conservation and protection practices that provide multiple environmental benefits to all citizens and help local economies.

Engaged woodland owners should be aware of these issues as they will undoubtedly affect assistant to woodland owners, communication and education on woodland issues, and forest health in Kentucky.



Answers to

Test Your Knowledge on page 21.

- A. River birch
- B. Passionflower vine
- C. Burt
- D. Forest tent caterpillar
- E. Lightning damage



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*Woodland Owners Short Course
registration form in this issue.
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Woodland Owners Short Course

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www.ukforestry.org**