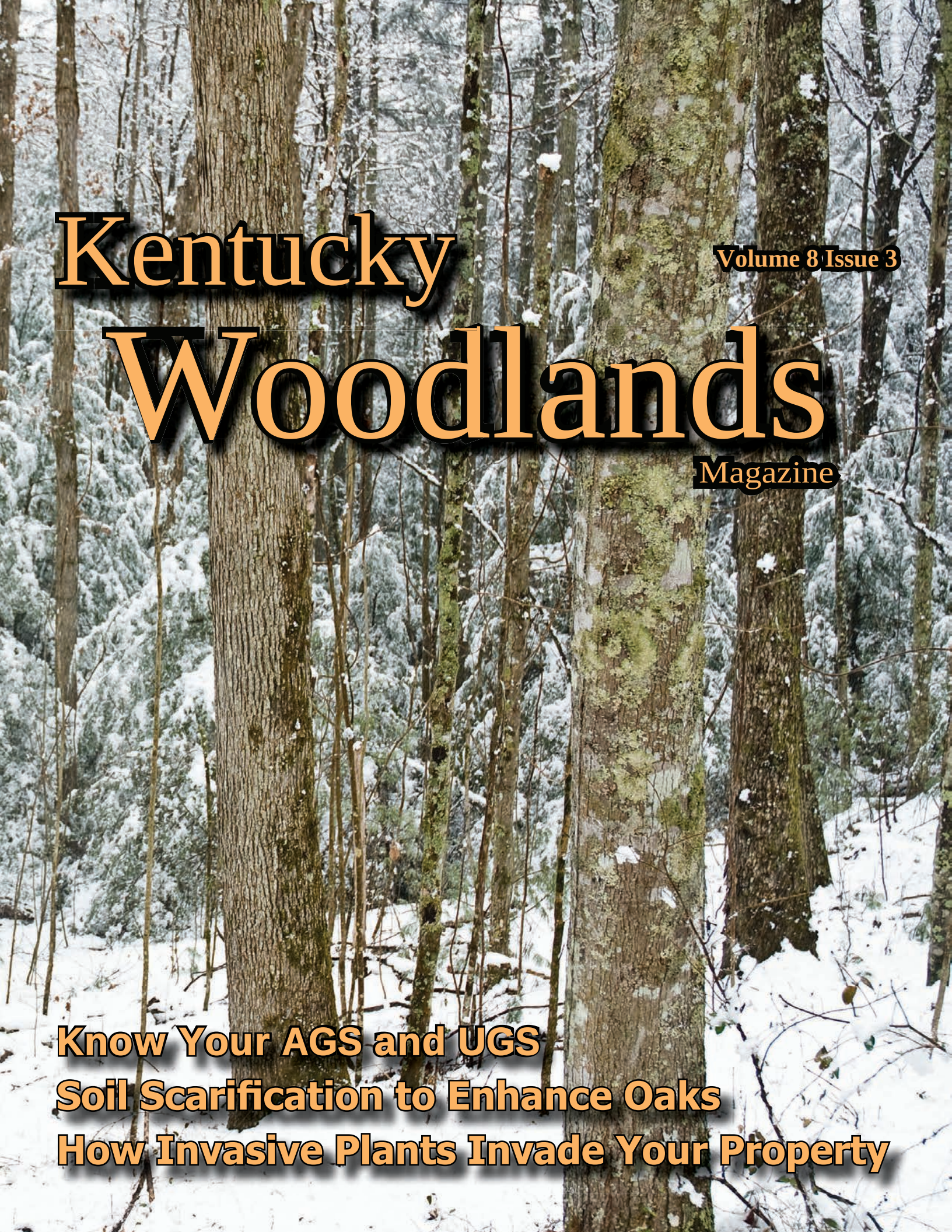

Kentucky Woodlands Magazine

Volume 8 Issue 3

Know Your AGS and UGS

Soil Scarification to Enhance Oaks

How Invasive Plants Invade Your Property

Kentucky Woodlands Magazine

Volume 8 Issue 3
December 2013

Promoting stewardship and sustainable management of Kentucky's family private forests.

In this Issue...

Departments:

Editors's Note: We are also pursuing the use of SFI paper produced on SFI certified and American Tree Farm System certified land.

From the Editors of the Kentucky Woodlands Magazine:

Did you see the cover? Do you know what AGS and UGS are? You should if you want to effectively manage your woodlands. This is one of those issues that if you are a hands-on woodlands owner you are going to come away with some great ideas. This issue of the magazine contains practical articles on invasive species, a new technique called soil scarification that can increase the number of oak seedlings and the answer to what AGS and UGS are. We also have up-to-date information on NRCS "Farm Bill" programs that provide financial assistance to help support your management. Check out our News-to-Use section, take our Quiz, lay your eyes on the largest post oak in Kentucky and read about a new way to get your woodlands certified. Finally, please read the information from our two woodland owner organizations, the Kentucky Woodland Owners Association, whose annual meeting is coming up March 31, and the Kentucky Tree Farm Committee.

That's a lot of stuff! We hope that you enjoy the magazine and please provide us feedback on this issue and what you would like to see in the magazine in the future. As we send this issue off to press its one of those -5 degree mornings in the Bluegrass and like everyone we can't wait for warmer weather. On behalf of University of Kentucky Forestry Extension and the Kentucky Division of Forestry have a great spring, it will eventually get here!

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About the Cover:
The cover image was supplied by Tom Barnes, Extension Wildlife Professor, UK Department of Forestry. This winter scene of hardwoods in the foreground and hemlocks in the background was taken in Powell County near the Red River Gorge. Hemlocks in Kentucky are being threatened by the hemlock woolly adelgid. For more information on this invasive insect please visit www2.ca.uky.edu/caps/hwa_hot_topic.asp.

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Editor's Note: The use of FSC mixed source paper indicates Kentucky Woodlands Magazine's commitment to sustainable woodland management.

How Invasive Plants Invade Your Property

Photo courtesy: Songlin Fei

by Jody Thompson

Many of our woodlands contain and are surrounded by invasive plants, which are constantly spreading. From bush honeysuckle choking out our woodlands to dandelions dominating yards, the invasion of plants can often seem overwhelming. Many plant invasions are easily managed, but others take a lot of work.

In all situations, though, the principles of invasive plant invasion and management are essentially the same. Plants take root where they have the least resistance to their invasion. In the case of invasive plants, they take over faster than others, because they face fewer threats. They also grow faster and often produce more seeds than other plants. The following information will teach you where to focus your search for invasive plants and how to develop an effective management strategy.

Habitats at Risk

Characteristics of invaded property are similar across habitat types. Plant growth occurs most prolifically where there are higher light levels, newly disturbed ground, and unmanaged forests, fields, lawns or right-of-ways. The drawing on pages 2 and 3 of this article shows locations that can potentially contain invasive species. While some of these locations are not woodlands, they provide habitats for invasive species. This leads to seed sources that will spread to adjacent woodlands or makes these areas difficult to use in the future.

Infestation Pathways

Invasive species often have help invading new areas. People and wildlife are the most common culprits that spread invasive plants species.

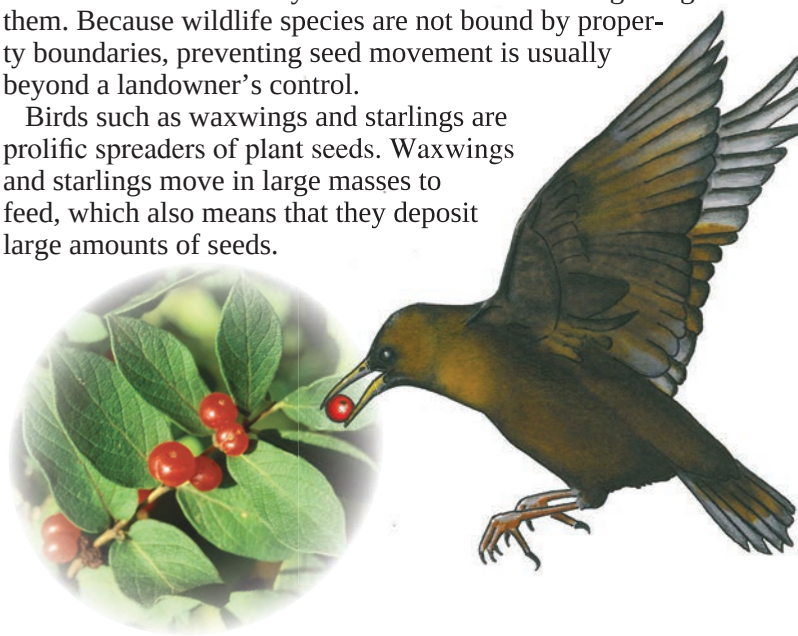
People

People spread invasive plants largely out of ignorance and/or negligence. This often happens by planting invasive species in a garden or as erosion control and spreading them with contaminated equipment. Invasive plants then become established and sometimes take over entire areas. They then become seed sources for invasions of neighboring properties.

Wildlife

Birds and mammals carry seed to new areas after ingesting them. Because wildlife species are not bound by property boundaries, preventing seed movement is usually beyond a landowner's control.

Birds such as waxwings and starlings are prolific spreaders of plant seeds. Waxwings and starlings move in large masses to feed, which also means that they deposit large amounts of seeds.



Bush honeysuckle fruit is abundant in central Kentucky and after birds consume it, the seeds are dispersed across the landscape, but especially where birds congregate.

Photo courtesy: John M. Randall, The Nature Conservancy, Bugwood.org
Drawing courtesy: Jody Thompson, Kentucky Division of Forestry

A. Wooded edges and fencerows – Plants can quickly become well-established, because these areas aren't maintained with mowing or other management as vigorously as other areas.

Wooded edges are quickly invaded due to:

1) Plenty of light for rapid plant growth.
2) Little competition with human activity.
3) We tend to manage up to the edge but not within the edge itself.

Wooded edges are one of the most frequently occurring habitat types. They are found along fields, yards, roads, commercial developments, parks, and water bodies. Wooded edges are created constantly and provide habitat for an enormous diversity of plants and animals. This habitat type is a transition zone between intensively managed areas and infrequently/unmanaged areas.

Fencerows and wooded edges are particularly well suited for birds, and invasive species that are spread by birds grow well in these areas. If a landowner is not diligent, edges can expand. Expansion happens when disturbance such as mowing, herbicide use, or foot traffic isn't getting as close to the wooded edge as it used to. Before you realize it, new woody plants are now part of the edge habitat. Now, you have less yard or field than you used to and more invasive species.

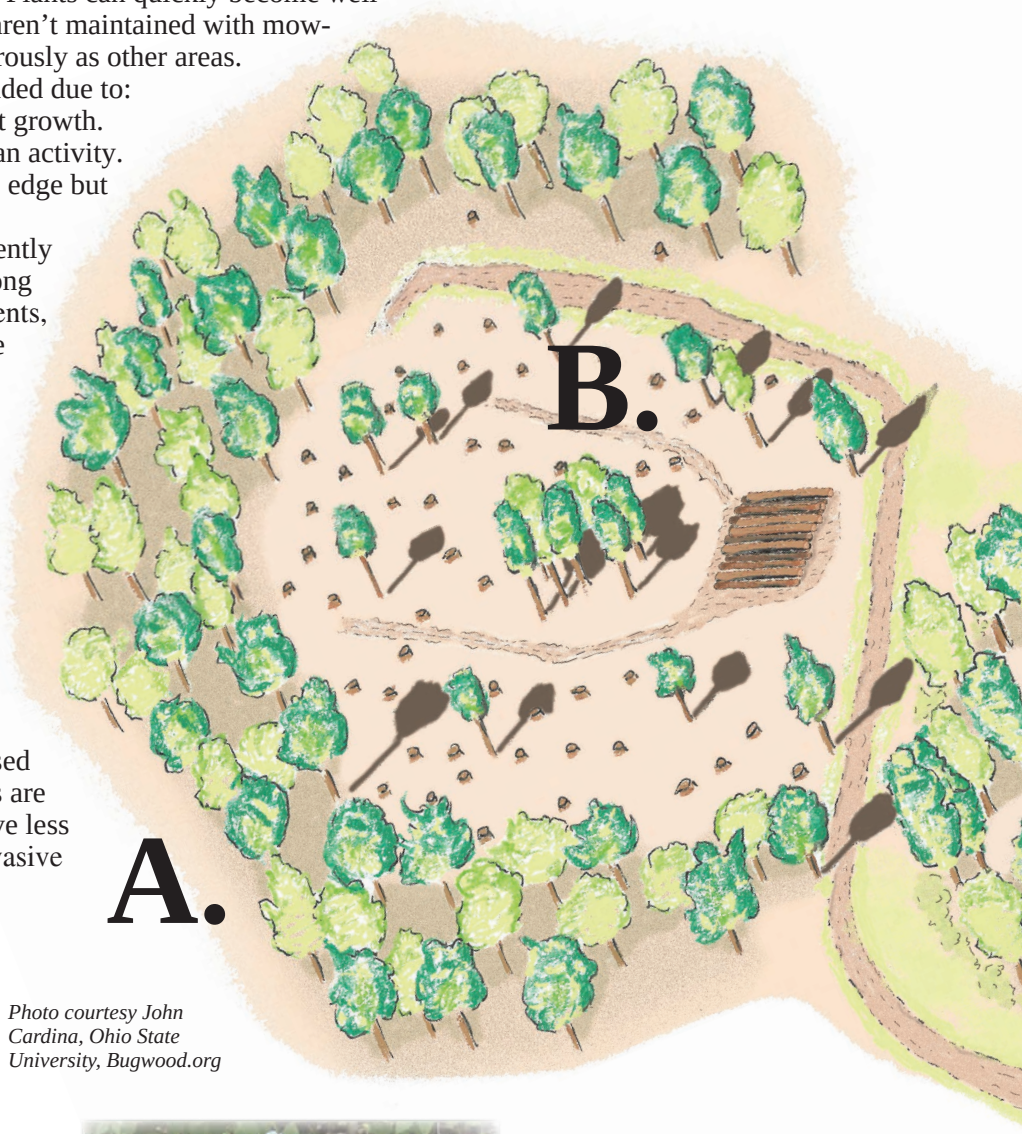


Photo courtesy John Cardina, Ohio State University, Bugwood.org

Photo courtesy: Steven Katovich, USDA Forest Service, Bugwood.org

Photos courtesy: Chris Evans, Illinois Wildlife Action Plan, Bugwood.org; Ohio State Weed Lab Archive, Ohio State University, Bugwood.org; Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

Photo courtesy: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

Garlic mustard is an extremely invasive biennial herb that outcompetes native wildflowers and contains chemicals that suppress tree seedling growth. This series of images shows the varied stages of garlic mustard development so that you can recognize this serious pest on your property. Hand pulling and herbicides work well (but herbicides may damage nearby plants). It often requires multiple control efforts, because seeds persist in the soil for five or more years. Bag mature stalks so that seeds are not inadvertently spread.

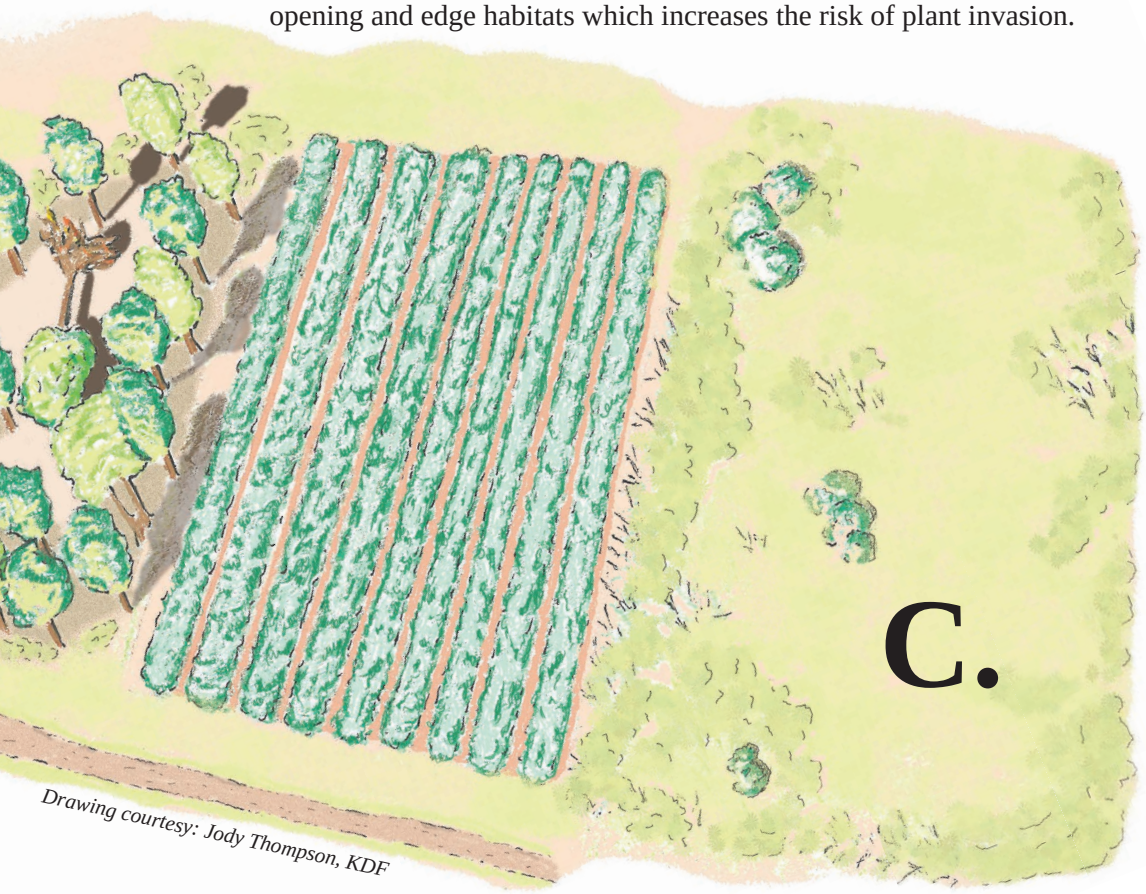
B. **Woodland openings** – These areas often develop suddenly. This exposes dormant seeds to light, which they would not previous getting. This leads to increased wildlife activity, which can bring in invasive plant seeds.

Woodland openings become invasive plant habitat due to:

1) Out of sight habitats that receive less attention than other areas.
2) Openings that often develop quickly.
3) They can contain both opening and edge habitat that must be managed.

Traditionally, woodland openings are the more biologically diverse areas of a forest. Dying trees, strong winds and logging are common causes of woodland openings. These areas usually receive less attention than other areas, which allows invasive plants to become established.

Management of openings varies according to landowner goals. A landowner or property manager may or may not want openings maintained. Openings aren't always a problem if they are planned or small. However, if unplanned or not managed, invasive plants establish quickly and are hard to control. After openings develop, you often have a combination of opening and edge habitats which increases the risk of plant invasion.



Drawing courtesy: Jody Thompson, KDF

Photo courtesy: James H. Miller, USDA Forest Service, Bugwood.org

Chinese silver grass is a popular ornamental species that can quickly spread from yards and invade nearby fields.

C. **Unmanaged fields/yards** – Mowing and cultivating keep invasive plants under control. Without it the plants have no competition, and the seeds develop quickly.

Fields and lawns are ideal places for plants to grow due to:

1) High light levels because every thing is maintained at a low height.
2) Less competition with large plants for water.
3) Excessively fertilized crop fields and lawns.

Crop fields, when in use, are intensely managed to keep weeds under control and maintain fertile soil. Even when weeds become established, a field soon receives at least some form of mowing or tilling. However, when the field is no longer used, it becomes like a lawn that isn't being mowed. Mowing keeps plant growth under control. However, the moment you stop mowing, weeds begin growing prolifically.

Photo courtesy: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

All photos except seed courtesy: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

Prevent infestations

1) *Learn about the plants on your property.* Green doesn't always mean good, and pretty berries can become ugly infestations. Plants that you are used to seeing can be the source of lost money and time.

2) *Use only plants with little to no invasive tendencies.* Consult resources such as the "Exotic Plants List" developed by the Kentucky Exotic Pest Plant Council which is available at www.se-eppc.org/ky. This information can teach you what to avoid planting on your property.

3) *Monitor areas that are at risk for invasion, edges, fields, etc.*

4) *Remove invasive plant seedlings as soon as they are noticed.* Kill scattered plants regardless of infestation level, because they can quickly grow out of control. Clean mowing and cultivating equipment before moving it to a new area. Equipment can mimic the actions of animals that spread invasive plants. Seeds and roots stick to equipment and come off later to become new infestations.

Management

Invasive plant movement can often be stopped or significantly reduced. Educated, responsible landowners have numerous tools at their disposal. The following invasive plant management principles will make the job much easier.

This series of images tracks the development of Tree-of-Heaven. The upper left image shows Tree-of-Heaven seedlings just getting started. The next image shows an area with a thick stand of Tree-of-Heaven that developed by root sprouts, which makes it a particularly challenging species to control. Tree-of-Heaven is an abundant seed producer with mature trees capable of producing more than a million wind-dispersed seeds per year. Be on the lookout for this aggressive invader, and work to control it before it becomes a major problem on your property.

Photo courtesy: Jan Samanek, State Phytosanitary Administration, Bugwood.org

Control infestations – Effective action depends on the extent of the infested area.

1) *Monitor at-risk habitats. These areas are most likely to receive new invasive weed infestations, because they are out of sight.* However, invasive plants are often the species that become established.

2) *Focus management on the advancing front when an infestation is extensive and older.* The advancing front is the edge of a growing infestation. This practice slows the spreading of an infestation into new areas. It also allows you to reach a point where you can work on the older infestation without other areas being taken over. Otherwise, new areas will become infested while you make slower progress.

3) *Manage plant infestations when they are young.* Young plants are the source of future infestations. Managing them, while young, allows you the opportunity to keep the infestation under control with less effort. In large and newly opened areas, such as a logging job, the size of the area can seem overwhelming to manage. However, when infestations are small, they are easier to control.

4) *Consult experts for the most effective treatments.* Effective treatments vary from one type of plant to the next and from one situation to the next. One plant may require a different herbicide than another, while in other situations, herbicide use should be avoided. For example, plant diversity goals can be ruined if treating garlic mustard with herbicide, so hand-pulling may be the only appropriate option. However, herbicides may be the only effective treatment when controlling bush honeysuckle with limited time and few resources.

Conclusion

Understanding how and where invasive species grow helps you to prevent and control them. Also, getting assistance with control methods from foresters or natural resource professionals will ensure better success. Finally, there are federal programs that can assist with costs associated with controlling invasive species. Using all of these resources will help maintain healthier woods.

About the Author:

Jody Thompson *is the Forestry Health Specialist with the Kentucky Division of Forestry. His responsibilities include monitoring, identification and education for insects, diseases, and invasive exotic plants in Kentucky's woodlands.*

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Kentucky Woodland Owners Association

Local Forestry Organizations

www.kwoa.net

Articles in this publication and others have emphasized the importance of woodlands in Kentucky. However, a portion of this story not discussed often is the wide variation in woodlands throughout Kentucky. Differences in climate, elevation, soil types, and dominant tree species mean that a woodland owner in the Appalachian Region, for example, may have a different approach to woodland management than an owner in Western Kentucky.

One approach to dealing with these differences is the establishment of a local or regional woodland group that would address the specific interests and requirements of that area. This approach has been used successfully in other states. No fixed template exists for this type of group; it can be as formal or informal as the members wish, with issues such as frequency of meetings and topics discussed controlled by the members. Experience indicates that this type of organization is most successful when the impetus for the formation and continuation of the group comes from woodland owners.

The woodland group could focus on issues unique to its geographic area that may not be of interest in other parts of the Commonwealth. These issues could be of a political or regulatory nature, or could involve woodland management issues such as invasive species. The program may include presentations from organizations such as the Cooperative Extension Service of the University of Kentucky Department of Forestry, Kentucky Division of Forestry, or the Natural Resource Conservation Service. It may be more efficient to engage these organizations as a group rather than meeting individually. Other speakers may be consulting foresters, loggers, or representatives of local mills. Field trips to members' farms could be part of the programming.

If you have an interest in organizing a local woodland group and think other woodland owners in your area might be interested, assistance and support can be provided by organizations such as the University of Kentucky Forestry Extension, Kentucky Division of Forestry, local Farm Service Agency, County Agricultural Agent, or the Kentucky Woodland Owners Association.

Jack Rentz,
President
Kentucky Woodland Owners Association


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Local Forestry Organizations in Kentucky: Project Ideas

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Local Forestry Organizations in Kentucky: Formation and Organization

UK COOPERATIVE EXTENSION SERVICE
University of Kentucky – College of Agriculture
FORFS 07.01
Local Forestry Organizations in Kentucky: A Growing Idea
William R. Thomas

Justification
Forests (also called woodlands) are a dominant part of the Kentucky landscape. These forests are mostly privately owned by more than 423,000 woodland owners. However, most woodland owners do not manage their forests and surveys

coordinate interagency support for LFOs and assist those interested in forming a LFO. Each agency recognizes the need to make woodlands locally relevant and believes LFOs are a key element in achieving this goal. They have committed to assist interested individuals with outreach, planning, and related logistics associated with forming, organizing, and launching a LFO. While the supporting agencies are committed to assisting anyone interested in forming a LFO, the success and direction of individual LFOs will be determined by local leaders and volunteers.

What is a Local Forestry Organization (LFO)?
LFOs are independent local organizations comprised of woodland owners, forest industry, local leaders, and anyone else interested in forestry issues. LFOs provide interested individuals an opportunity to increase their knowledge on forest management and respond to local and state forestry issues. Community interest, citizen

A number of publications have been developed to assist those interested in establishing local forestry organizations in Kentucky. These publications and contact information for those that can assist can be found at www2.ca.uky.edu/forestryextension/LFO.php

Make plans to attend the
2014 KWOA Annual Meeting
March 31 - April 1, 2014
Pine Mountain State Resort Park
Pineville, Kentucky

For more information:
606.876.3423 or www.KWOA.net

For more information log on to www.kwoa.net

NRCS Programs

by Jerry Adams

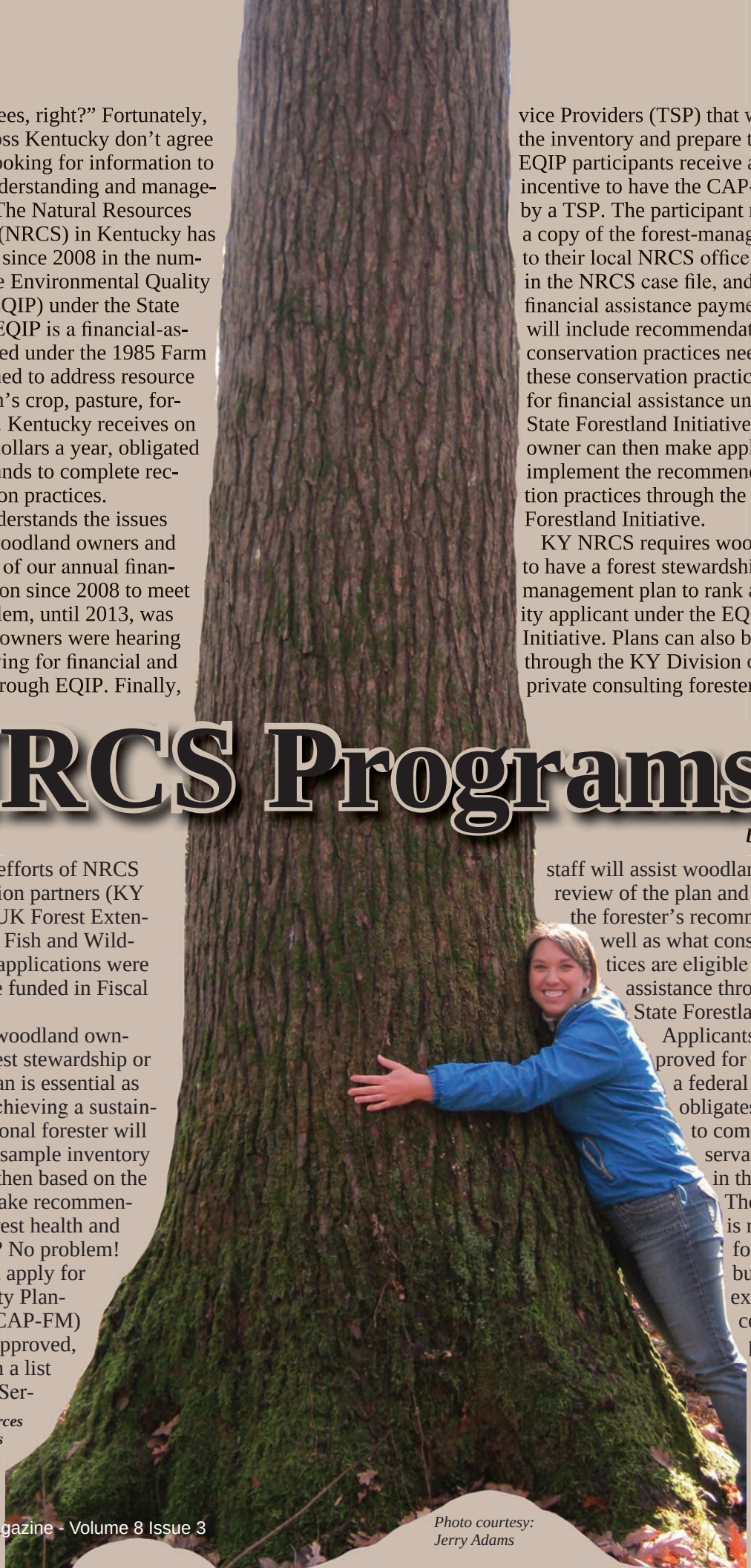
"It's just a bunch of trees, right?" Fortunately, woodland owners across Kentucky don't agree and are increasingly looking for information to guide them in their understanding and management of their forests. The Natural Resources Conservation Service (NRCS) in Kentucky has seen a steady increase since 2008 in the number of applicants to the Environmental Quality Incentives Program (EQIP) under the State Forestland Initiative. EQIP is a financial-assistance program crafted under the 1985 Farm Bill provisions, designed to address resource concerns on our nation's crop, pasture, forest, and wildlife lands. Kentucky receives on average, $10 million dollars a year, obligated statewide on private lands to complete recommended conservation practices.

Kentucky NRCS understands the issues and concerns facing woodland owners and has set aside a portion of our annual financial assistance allocation since 2008 to meet those needs. The problem, until 2013, was not enough woodland owners were hearing the message and applying for financial and technical assistance through EQIP. Finally, through the Outreach efforts of NRCS staff and its conservation partners (KY Division of Forestry, UK Forest Extension, and KY Dept. of Fish and Wildlife), more forestland applications were received than could be funded in Fiscal Year 2013.

First and foremost, woodland owners need a plan. A forest stewardship or forest management plan is essential as the first step toward achieving a sustainable forest. A professional forester will inspect and conduct a sample inventory of the woodland, and then based on the owner's objectives, make recommendations to improve forest health and productivity. No plan? No problem! Woodland owners can apply for a Conservation Activity Plan-Forest Management (CAP-FM) through EQIP. Once approved, the owner selects from a list of certified Technical Service Providers (TSP) that will complete the inventory and prepare the CAP-FM. EQIP participants receive a payment incentive to have the CAP-FM prepared by a TSP. The participant must provide a copy of the forest-management plan to their local NRCS office for inclusion in the NRCS case file, and to certify the financial assistance payment. The TSP will include recommendations of the conservation practices needed. Most of these conservation practices are eligible for financial assistance under the EQIP State Forestland Initiative. A forestland owner can then make application to implement the recommended conservation practices through the EQIP State Forestland Initiative.

KY NRCS requires woodland owners to have a forest stewardship or forest-management plan to rank as a high priority applicant under the EQIP-Forestland Initiative. Plans can also be obtained through the KY Division of Forestry and private consulting foresters. Local NRCS staff will assist woodland owners with review of the plan and understanding the forester's recommendations as well as what conservation practices are eligible for financial assistance through the EQIP State Forestland Initiative.

Applicants that are approved for funding, sign a federal contract that obligates EQIP dollars to complete the conservation practices in their woodlands. The participant is responsible for bearing the burden of the expenses to complete the practices up front. Financial assistance will be approved once the completed



The Kentucky Natural Resources Conservation Service provides numerous programs to help woodland owners care for their woodlands.

Photo courtesy: Jerry Adams

practice(s) have been certified by NRCS to meet certain standards and specifications as set forth in the EQIP contract. Payment incentive rates have been calculated to approximate 75 percent of the actual cost of completing the needed treatment. The contract participant can choose to either complete the treatment(s) themselves or hire a contractor/vendor to do so. Kentucky coordinates its payment incentive rates with several adjoining states to ensure consistency.

Kentucky Natural Resource Conservation Service's financial and technical assistance programs 2010 through 2013					
	Estimated Cost Requested	**Application Acres**	**Contracts Obligated**	**Obligation Amount**	**Contracted Acres**
2010 Totals	$1,501,000	-	59	$465,148	2,699
2011 Totals	$1,222,305	10,041	82	$762,585	5,223
2012 Totals	$1,046,771	4,405	81	$699,687	2,950
2013 Totals	$1,204,505	14,749	121	$727,168	11,148
All Years	**$9,949,160**	**29,195**	**686**	**$5,309,175**	**44,039**

The most common EQIP – Forestland Initiative practices applied for include:

Forest Stand Improvement (FSI) – Typically recommended by foresters to alleviate overcrowding and provide the best trees of form and value more room to grow. Foresters will mark the trees to deaden (mechanical and chemical) or fell to open up the spacing between crop trees and allow more sunlight to penetrate the forest canopy. FSI is often repeated in the same stand over 10 year periods, to eventually reach a level of 40-60 of the best trees that will be harvested. Payment incentive rates are paid by the acre.

Photo courtesy: Harry Pelle

This beech tree was marked (orange paint) for treatment. The woodland owner used hack and squirt practice to kill the tree. Note the dye in the hacks helps keep track of treated trees.

Brush Management – A treatment used to address woody species within the forest that are adversely affecting the growth or regeneration of the stand. Most commonly prescribed by Central Kentucky foresters in woodlands where bush honeysuckle has invaded. This invasive species can become so heavily infested within the forest stand that no regeneration of the native species can initiate. Almost no sunlight reaches the forest floor. The treatment involves mechanical removal of the plants along with chemical application to prevent sprouting. Payment incentive rates are paid by the acre.

Tree and Shrub Planting – Areas previously in cropland or pastureland that the owner would like to convert permanently to woodland. Sites are matched by their soils to tree species most compatible and the long term objectives of the participant. Foresters may also recommend "enrichment" plantings where the desired oak/hickory component is missing from the forest stand. Payment incentive rates are paid by the acre.

Fence – Necessary where pastureland or grazed areas adjoin woodland. Exclusion of livestock will make an immediate impact on the forest flora and regeneration of seedlings. Typically, a five-strand barbed wire fence is the minimum accepted. Payment incentive rates paid by the linear foot installed.

The Farm Bill is under review and revision by USDA and legislators, but those involved have indicated they support a strong emphasis on private non-industrial forestland. Kentucky woodland owners should continue to seek out technical and financial assistance from NRCS and its partners to ensure the sustainability of our nation's forests. Please stop by your nearest USDA Service Center or local Conservation District office to inquire about the EQIP State Forestland Initiative for 2014.

Photos courtesy: Jerry Adams

Brush management is a frequently used treatment to address woodlands that are being overtaken by invasive shrubs such as bush honeysuckle (left). After the area has been treated (right) native trees will have a chance to become established.

About the Author:

Jerry Adams *works with the Kentucky Natural Resources Conservation Service as their state forestry coordinator.*

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Soil Scarification to Enhance Oak Seedling Establishment

by John M. Lhotka and Jeff Stringer

What is Soil Scarification?

Oak species play important economic and ecological roles in Kentucky's forests. Acorns provided by oak trees are important food sources for game and non-game animal species. However, acorn production and germination are needed to establish new oak seedlings. These new oak seedlings are important, because they are necessary for the regeneration of oak forests. One challenge to establishing new oak seedlings is the high year-to-year change in the number of acorns produced by oak trees. In years when acorn crops are small, almost all the acorns are eaten by animals or destroyed by insects and few acorns are left to germinate into seedlings. Large crops are needed to establish oak seedlings, allowing the oaks to win the battle versus the critters that feed on acorns.

To increase oak seedling numbers in a forest and improve chances for successful oak regeneration, researchers have looked for methods that increase acorn germination rates. Soil scarification, the mixing of acorns into the upper layers of soil, has been one method tested to help increase the number of oak seedlings that establish following a large acorn crop. Soil scarification is accomplished with the use of mechanized equipment to create a shallow soil disturbance in desired areas that mixes acorns into the soil. It also provides control of small trees and other plants that could compete with the newly established oak seedlings. Studies on scarification suggest the mixing or burying of the acorns in the soil reduces the acorns that are eaten or killed by excessive drying or cold temperature compared to acorns located on the soil surface. Soil scarification has been completed using equipment such a root rake on a bulldozer or a farm tractor and disk.

Does Soil Scarification Enhance Oak Seedling Establishment?

The short answer to the question is yes. Soil scarification and its influence on oak seedling establishment has been studied in a number of locations and conditions, including an upland oak forest in central Pennsylvania, upland oak forests in southern Illinois and Indiana, two bottomland stands in southern Illinois, and in upland stands in Eastern Kentucky. In each of these research trials, soil scarification, regardless of the machinery used and oak species involved, resulted in more newly established oak seedlings compared to areas where no scarification was used.

Photo courtesy: Chris Osborne

To highlight the patterns seen in these soil scarification studies, we present the findings of the most recent study, which was completed by the authors on the University of Kentucky Robinson Forest. The Robinson Forest study was established in five upland oak sites ranging from 0 to 40 percent slope. Within each site containing scattered northern red oak trees, paired experimental areas were established; one that was scarified and the other was not. Treatment was completed in November 2011 after the fall of a bumper crop of acorns. Scarification was implemented using a single pass of an 80hp John Deere 550G bulldozer with a mounted 8-foot wide, seven tine root rake. The operator followed winding paths through the stands, ensuring that the tines of the root rake were kept approximately 4 to 6 inches deep. The intent was to mix acorns into the top of the soil. The rake was lifted periodically to avoid rocks and stumps or to dislodge accumulated woody debris from the rake.

Photo courtesy: John Lhotka

Bulldozers equipped with a tine root rake can be used in soil scarification practices. One advantage that bulldozers have over farm tractors is that they can be used on steeper terrain.

After one growing season following the soil scarification treatment (fall 2012), more newly established oak seedlings grew within the scarified areas than the non-scarified areas. In the scarified areas 2,806 new oak seedlings per acre were established. These seedlings, along with the 1,915 small oak seedlings per acre that were there prior to the treatment, resulted in a total of 4,721 oak seedlings per acre one year following soil scarification. In the same time period, a loss of 702 oak seedlings per acre occurred in the non-scarified areas. When comparing the findings of this study conducted in Eastern Kentucky to those completed elsewhere, the 2,806 oak seedlings per acre gained one year after the scarification is similar to the results found in other studies where soil scarification resulted in 3 to 16 fold increases in oak seedlings (Table 1).

Implementing a Soil-Scarification Treatment

Research indicates that soil scarification can be used on a wide range of upland oak species, including northern red oak, white oak, black oak and those oak species that occur with them. Research also indicates that this technique can work over a range of soil and topographic positions as long as the equipment can operate safely. Soil scarification has been shown to increase the establishment of oak seedlings however operational and biological factors control the success of a scarification treatment. The following are the steps and details involved in helping ensure successful establishment of oak seedlings through soil scarification.

1) **Acorn Presence** - First, a large acorn crop must be present. While no recommendation on acorn numbers is available, it is important to know the acorn crop is larger than average. This requires a little knowledge of acorn production and commonsense observations of the number of acorns on the trees in late summer and fall.
2) **Timing** - Timing of soil scarification is also crucial. It is recommended that areas be scarified in the autumn following acorn drop, but before leaf fall. This timing allows the leaves to cover the scarified soil, providing protection for the acorns that are buried or partially buried. Extremely dry or wet conditions at the time of treatment also may influence its success. Extremely dry conditions may cause acorns to

Photo courtesy: Chris Osborne

Oak acorns that are on top of the leaf litter are subject to drying out and predation from insects and animals before they have the opportunity to germinate into oak seedlings.

Study	Site	Scarification Equipment	Oak Seedling Density	
			Non-scarified	Scarified
Zaczek 2002	Pennsylvania, upland oak	Bulldozer/Root rake	1,002	11,596
Lhotka and Zaczek 2003a	Illinois, upland oak	Bulldozer/Root rake	515	2,272
Lhotka and Zaczek 2003b	Illinois, bottomland oak	Farm Tractor/Disk	183	2,931
Rathfon, et al.2008	Indiana, upland oak	Farm Tractor/Disk	3,397	9,300
Parrott, et al. 2013	Kentucky, upland oak	Bulldozer/Root rake	1,592	4,721

Table 1. Comparison of oak seedling densities (number per acre) following one growing season between areas receiving soil scarification and non-scarified reference areas by research study, location, and scarification equipment type.

dry out and fail to germinate. On the other hand, doing soil scarification when conditions are too wet may compact or displace soils and may bury acorns too deeply.

3) **Equipment** - A variety of equipment including small farm tractors pulling disks and dozers with root rakes have been used for soil scarification. These equipment types have the size and maneuverability to operate in forests without damaging large trees, but still have sufficient power to complete the operation. Selection of appropriate equipment must balance traction, soil scarification, maneuverability, and safety. The farm tractor with disk method may be preferred in open stands on flat ground, but the mobility of the equipment may be limited in dense forests or those containing large amounts of deadwood. In contrast, the bulldozer and root rake method has the ability to operate in dense and recently harvested stands, while still providing scarification benefits. Also bulldozer and root rake scarification can operate on steeper slopes than farm tractors; work in Kentucky suggests that the bulldozer method can be effective on slopes up to 40 percent.
4) **Scarification Pattern** - Scarification of every square foot is not necessary, and scarifying multiple paths through stands is adequate. Equipment cannot easily access certain areas, and other areas do not contain acorns or oak trees. This treatment can also be used to target areas in and around a cluster of oak trees while leaving the rest of the stand unscarified.
5) **Technique** - Typically scarification should disturb the upper 4 inches of leaf litter and soil which is easy to achieve with a farm tractor and disk. Operators of bulldozers must be careful not to dig too deeply. Also bulldozer root rakes can accumulate large amounts of dead branches and rocks and the operator must clear these periodically.

Follow-up Treatments – While the scarification will increase the number of oak seedlings it is important to ensure that the right conditions are present to grow the seedlings. The most important of these conditions is light. Therefore, we stress that you consider a treatment to provide forest light conditions known to increase the survival and growth of newly established oak seedlings. Typically this is done with what is called a mid-story removal, refer to the article entitled "Using Midstory Removal to Enhance Oak Development" in the December 2012 issue of the Kentucky Woodlands Magazine, www2.ca.uky.edu/KYWoodlandsmagazine/Vol7_No2/Research_Brief-pg16_17.pdf for more information and ask your forester about these practices.

Soil scarification can enhance oak seedling establishment following a large acorn crop and can serve

Photo courtesy: John Lhotka

Farm tractors with disks work well on areas that are not too steep and are relatively open. Caution should be used as the slope of the area increases.

Photo courtesy: Chris Osborne

When using a bulldozer and a root rake it is important to not go too deeply. Operators should aim for disturbing the top four inches of leaf litter and soil.

Photo courtesy: Chris Osborne

Depending on the area being treated bulldozers using a root rake can accumulate a large amount of dead woody material that will require occasional clearing.

Photos courtesy: Chris Osborne

This series of images shows how soil scarification can be an effective management practice in the establishment of large numbers of oak seedlings. The top image shows the scarified path created by a bulldozer using a root rake. The middle images shows the increased contact the acorns have with the soil following scarification. The bottom image shows how competing vegetation is reduced and oak seedling establishment is greatly enhanced within the scarified path.

Photo courtesy: John Lhotka

as an important tool in the "toolbox" of woodland owners. This tool is one that is particularly helpful where oak regeneration is currently lacking. Contact your local forester for assistance in scoping your property for the applicability of a soil scarification treatment.

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Kentucky Tree Farm Committee Newsletter

2013 Third Party Certification Assessment on Kentucky Tree Farms

by Lloyd Foe

The American Forest Foundation's National Office coordinates Third Party Certification Assessments on Tree Farms annually. In 2013 nine (9) states were selected from the North, Central, West and South Regions of the United States. In Kentucky, an assessment was conducted during the week of June 4, 2013, on 18 Tree Farms located in 16 counties (see green shaded counties in the map below). The Forest Management Plans and associated documentation were reviewed in conjunction with the on-site visits.

Non-conformance issues were observed on some of the Tree Farms. In an effort to bring the Tree Farms into compliance with the American Tree Farm Standards of Sustainability, Performance Measures and Indicators, a letter and recommendations for corrective action were sent to each Tree Farmer and the inspecting foresters. Also, a required report was provided to the national office.

The assessment included several observations such as:

a) Exceptional commitments to sustainable forestry by landowners through the application and execution of sound forestry practices.
b) Many forestry operations were conducted with an acute awareness of other forest values such as water quality, wildlife habitat, ecosystems and biodiversity.
c) All of the required annual inspections were consistently completed and optional telephone interviews were conducted with the Tree Farmers to ensure that contact is made at least every five years.

To learn more about the Kentucky Tree Farm program visit: www.KYTreeFarm.org

Woodland Owner Involvement in the Kentucky Legislative Session

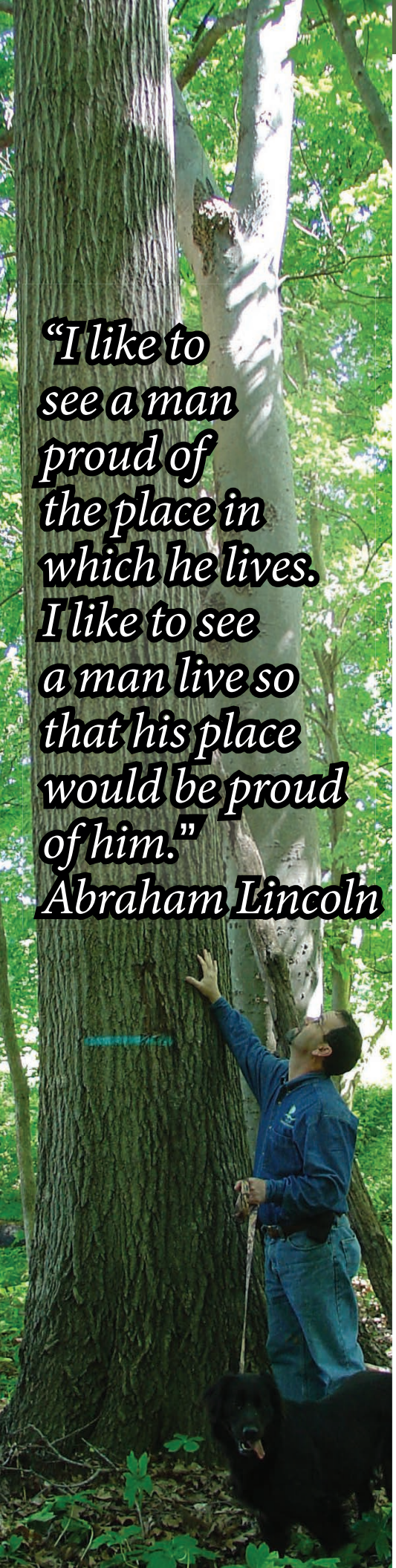
by Bob Bauer

The Kentucky Tree Farm Program is co-sponsored by the Kentucky Forest Industries Association (KFIA) and has a number of tree farmers and wood industry members involved with managing the Tree Farm program in Kentucky. In addition to woodland owners and industry representatives, the Tree Farm committee also receives support from a number of agencies and other groups including the Kentucky Division of Forestry and University of Kentucky Forestry Department, which provide much of the interaction with landowners through visits and educational programs.

KFIA has an office in Frankfort and is responsible for assisting members with all types of business and forestry issues. The Association is heavily involved in legislative matters with an emphasis on Kentucky state legislative issues. The Kentucky General Assembly comes into session starting in early January and concludes by the middle of April with 60 working days set aside for the session. Over two thousand bills will likely be introduced, and KFIA monitors all legislation and works hard to protect the interests of the wood industry and forest landowners when issues arise that could affect the management of forests and the bottom line of businesses that are related to the wood industry.

The 2014 Legislative Session will cover a wide range of issues with one of the major forestry issues likely to revolve around repeat bad actors in the logging community. The association is looking at possible legislation to provide assistance to state government to improve fine collection and make it harder for a repeat bad actor to operate unless they have paid fines assessed for past bad logging activities. The legislation would focus on a small percentage of loggers that have been through a four-step process, have not corrected water quality problems, and have been deemed a bad actor on more than one occasion. Since many of these repeat offenders have not paid fines and continue to operate, there needs to be improvement in bringing them into compliance.

KFIA works hard to protect the state's tree farmers and other forest landowners from overregulation and supports legislation that will help improve forest management in the Commonwealth. Landowners are invited to learn more about getting involved with legislative issues by contacting the KFIA office at 502.695.3979 or visiting www.kfia.org to find out the latest legislative issues.



It's Your Woods
(So know your AGS and UGS)

by David Mercker

As a young forester trundling through the woods nearly 30 years ago, three memories vividly stand out: 1) only a brisk cadence allows one to keep pace with the forest supervisor, 2) property lines aren't always accurate, and 3) forest management begins with defining the "AGS" and "UGS."

Forests, and trees in particular, are classified, grouped, evaluated, and judged based on many characteristics. These characteristics, in the simplest and most broad sense, can be either acceptable or unacceptable. Professional foresters are complete with their own vocabulary, and quickly refer to those trees with favorable qualities as AGS, short for "Acceptable Growing Stock." Trees that don't meet forest ownership objectives are termed UGS, or "Unacceptable Growing Stock."

Knowing the difference and taking the time to separate them can be challenging. In order to create a clear picture, let's begin by explaining the term "growing stock" and how growing stock can be either acceptable or unacceptable.

Growing Stock

We've all been taught that when the meaning of a phrase is not understood, first break it into its parts. The word "growing" needs no explanation, but "stock" might. Think of stock as the amount of something held in reserve for future use. So in the cattle industry, livestock are not yet ready for market. As consumers we stock our cupboard for future consumption. Retailers make sure that they are well-stocked with salt prior to an anticipated ice storm, and so on. In forestry, we refer to live standing trees in a forest as growing stock. Growing stock is acceptable when it meets the landownership objectives. Typically AGS includes trees that are not yet ripe for picking and are still adding wood volume. These trees are retained for future benefit or sale. That's the simple part. The picture becomes a bit foggier when we seek to describe what constitutes the word acceptable. When left to our own training, knowledge, and experience, foresters typically refer to AGS as follows:

- Desirable species (such as oaks, walnut, maple, yellow poplar, cherry, hickory, etc.)
- That are with good form (relative straightness) and grade (few defects)
- Vigorously growing with expanding crowns
- Of the right size
- Found on the appropriate site
- Meeting the demands of the local wood industry.

Defining AGS is complicated, especially when the above considerations are melded together. For instance, white oak is commonly considered AGS. However, if a certain white oak tree is deformed or suppressed from overhead competition or was damaged or hollowed-out by previous abuses (such as fire or livestock) or growing off-site (for instance, on a site that is too wet), then that tree is tallied as an UGS. So a would-be AGS can be relegated to UGS. The environment and human interaction can be tough on trees! Of course calling out AGS vs. UGS depends on the standards by which the trees are judged.

Who's the Judge?

One of most fascinating features of our grand democratic experiment is that individuals, not just governments, have the pleasure of owning land. Private family-owned woodlands are the largest ownership class in the United States. Landowners, much like the woodlands they own, are a diverse group. Ultimately it is the owner of the trees who has the say on which trees are acceptable and which ones aren't.

This tree is no longer considered growing stock because it is mature and ready for harvest.

Photo courtesy: Luke Mercker

The previous criteria foresters use to constitute AGS is only a template. It assumes that the primary ownership objective is to grow top quality trees, of high value, as rapidly as possible, to meet the demand of the local wood industry. Many landowners embrace these criteria, but some do not and that's okay. In fact, reports have continually showed that woodland owners often place wildlife and non-consumptive uses of their forest higher than monetary return. Non-consumptive uses can include: aesthetics, recreation, mental restoration, heritage, etc. Consider Table 1 and how the determination of AGS varies, according to the alternative wildlife and aesthetic objectives.

Table 1. Determination of Acceptable Growing Stock based on Ownership Objectives.

Ownership Objective	AGS - Trees to Favor
Wildlife Diversity  ***Wildlife dens can be AGS.***	Wildlife diversity requires habitat diversity, so aside from oaks and hickories (hard mast fruit producers), AGS can include blackgum, persimmon, dogwood, etc. (soft mast); trees classified as culls, dens, and perching can be AGS as well as understory trees that are important for nesting and browse; a forest that is too well-manicured often is not preferred for wildlife. Example of wildlife AGS: a large hollow beech, complete with many den holes and producing nuts. *Photo courtesy: David Mercker*
Aesthetics  ***Trees with special shapes may be AGS for their aesthetic value.***	Referred to as "look-em-at-em" trees, trees with aesthetic appeal are as varied as the ones doing the looking; AGS can include crooked and forked trees, those that are hollow and with den holes, those with pleasing flowers or fall color; although such AGS may not have much monetary value, their intrinsic value can be priceless. Example of Aesthetics AGS: two trees that have fused together creating a contorted form.

Sumac can be AGS by meeting both aesthetic and wildlife objectives.
Photo courtesy: David Mercker

Inventory Your Growing Stock

By now you are likely beginning to imagine your own woodland, what it presently looks like, and what it could become. Perhaps your ownership objectives are more in focus, too. But before you can achieve your objectives, you must know what your woodland currently contains. What do you have to work with? So let's return to the example of "stock," specifically the metaphor on stocking your cupboards. Before you can properly stock your cupboards, you must first know what is already there. You could say that you inventory your cupboards before making the list of wares that are needed. The same is true of your woodland. A timber inventory, like any inventory, involves taking stock of what is already available. Professionals are needed and recommended. But private woodland owners can conduct a cursory inventory to help in taking stock of what is present. Follow these steps:

1. Establish your AGS and UGS criteria and have a tally sheet.
2. Randomly traverse your woodland, and measure 1/10 acre plots; these are circle plots with a 37 foot radius.
3. Record your AGS trees and UGS trees using a simple slash-tally; each tree tallied represents 10 trees per acre.
4. Add up all your plots then divide by the number of plots taken; do this for both the AGS and UGS; the results will give you some baseline information that will aid in achieving your objectives.

Photo courtesy: David Mercker

A typical upland hardwood stand with both AGS and UGS.

To learn more about conducting a timber inventory, you are encouraged to read the following publication for more information:

Henning, J. and D. Mercker 2009. *Conducting a Simple Timber Inventory.* https://utextension.tennessee.edu/publications/documents/PB1780.pdf

Often it's Not Either/Or

There is a tendency (and it is a misconception) to think that woodlands are managed solely for crop trees—or for wildlife or aesthetics. But they are not mutually exclusive. Indeed they can occur at the same time. More often than not that is the case for most small landowners. For instance, even the most hard-core timber producers can leave occasional UGS to benefit wildlife and aesthetics.

And the opposite can be true too for those landowners whose objectives focus primarily on non-timber uses. With this option, often the AGS favored are the lower value "D" trees: defective, dying, deformed, diseased, damaged, and just duds. Beware though. Not having some higher-value crop trees could limit the utility for future generations and even lead to woodland conversion to non-forest uses. In other words, if the woodland has such poor quality trees that it can't pay its way, it may be converted to a use that will. And that defeats our purpose. So for a more holistic, stewardship-centered focus, the criteria for AGS and UGS could be broadened.

Hidden treasures!

Photo courtesy: David Mercker

A Woodland Example

To help you visualize some of what has been discussed, below is an example of AGS and UGS as it relates to a typical forest. This example assumes all the trees tallied are on a 1/10 acre plot (37 foot radius) located in the hardwood region. Note: This example only includes one inventory plot. For a more accurate representation, several plots would be required.

Condition and Recommendation: 7 of the 11 trees are considered AGS, and since this is a 1/10 acre plot, that would yield approximately 70 AGS trees per acre. This number is a favorable stocking level of AGS. However, the 40 UGS trees per acre are competing with the AGS and to enhance the vigor and insure the survival of the AGS, timber stand improvement (TSI) is recommended. With the TSI, the UGS trees should be harvested (if possible) or deadened (if not).

Example 1:
Objective: Grow top quality hardwood timber to produce periodic income.

Species	Diameter (in.)	Condition	AGS	UGS
White oak	14	Excellent	x	
Elm	20	Cull		x
Red oak	12	Excellent	x	
Hickory	10	Average	x	
Box elder	14	Cull		x
Tulip tree	18	Excellent	x	
Tulip tree	8	Average	x	
White oak	8	Crooked, broken top		x
Red oak	14	Average	x	
Beech	30	Cull (hollow)		x
Beech	14	Excellent	x	
		Totals	**7 (or 70 per acre)**	**4 (or 40 per acre)**

The reason the UGS trees did not meet the ownership objectives are as follows:	
20-inch elm	- Elm are subject to Dutch elm disease, have low monetary value, produce little wildlife mast
14-inch box elder	- Low market value, produce little wildlife mast, growing off-site
8-inch white oak	- A stunted (overtopped) tree that is dying due to broken top
30-inch beech	- Although potentially a good wildlife tree, it is so massive that it is competing heavily with the AGS, other excellent quality beech exist on the site to produce wildlife mast.

Photo courtesy: David Mercker

Conduct timber stand improvement to remove UGS such as this elm.

Where to Go from Here

Feeling a bit overwhelmed? That's not necessary. There's help. Foresters often state that forestry is not rocket science. It's more complicated than that. Sure, there is much to be known, but that's why professional foresters exist. Trained broadly in the natural resource disciplines, professionals can help you establish your objectives. From the objectives, comes the inventory. The inventory determines the AGS. Then, from your AGS, action steps are established. Action steps ultimately help you achieve your objectives. Just like putting one foot in front of the other. Take a moment to read that again. It summarizes what this is all about.

Finding a professional forester isn't that difficult. Foresters are either publicly or privately employed. Each state has a forestry agency whereby public foresters administer conservation programs, fight wildfires, and, to varying extent, assist landowners in the development of forest stewardship plans. The plans contain steps to help achieve objectives. Normally landowners are then turned over to private foresters to assist in carrying out the stewardship plan. Private foresters are either independently employed consultants or are employed by forest industry. As always, it is beneficial to seek the counsel of many.

To locate a state agency forester, see:
http://forestry.ky.gov or
http://forestry.about.com/od/stateforestry/State_Forestry_Agencies.htm

To locate a private consulting forester, see:
www.kacf.org or
www.acf-foresters.org/

Photo courtesy: Jeff Lannom

A timber inventory helps evaluate the AGS and UGS in your stand.

Photo courtesy: Allan Houston

An AGS tree based on aesthetic objectives.

Conclusion

Some days, if you stop, attentive and listening real close, you can hear the sounds of foresters way off in the woods, their tools rattling, their persistence as they scurry across the hills, and the thunder as they sound off trees in their plots.

"Give me a white oak, 22" x 3 logs, AGS
. . . a sourwood, 16" x 2 logs, UGS
. . . a red oak 18" x 2.5 logs, AGS . . ."

It's the way of woods people. And as a private landowner, you are one, too. It's your woods. Get to know it. The privilege of woodland ownership also carries the responsibility of stewardship. Forest management begins by defining your AGS and UGS. Without this knowledge, you're just another landowner. With it, you're one step closer to becoming a steward.

Photo courtesy: David Mercker

Mature white oak veneer trees.

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Kentucky Forestry Agriculture Economic Summary 2013-2014

FORFS 13-07

Kentucky's forest and wood industry is a major economic engine that compares favorably with other agricultural commodities as well as with other industries in the Commonwealth overall. This executive summary covers the highlights of this important industry; a complete report will be available in the spring of 2014 at www.ukforestry.org

2013 Economic Importance of Kentucky's Forest and Wood Industry

$12.8 billion total economic impact with $7.9 billion in direct revenue

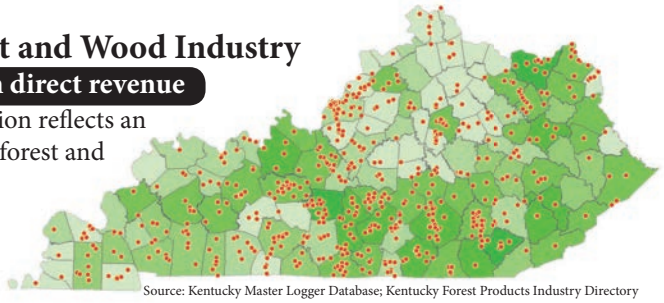
The $7.9 billion in direct impact is revenue while the $12.8 billion reflects an additional $4.9 billion in economic activity directly tied to the forest and wood industry. These values represent increases over 2012.

59,306 total jobs with 27,574 directly employed

This represents 2.5% of all employment in Kentucky.

Leading producer of hardwood sawlogs in the South

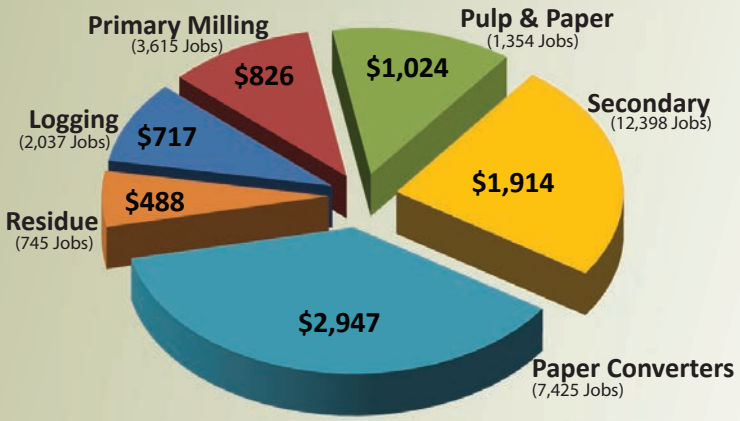
729 million board feet of logs and 1.267 million tons of pulpwood harvested in 2013.



Source: Kentucky Master Logger Database; Kentucky Forest Products Industry Directory

Kentucky Wood Industries and Master Logger Distribution 2013
Dots represent the 703 wood industry facilities in Kentucky. Intensity of county shading indicates the relative density of Kentucky Master Loggers. The darker the county the more Master Loggers.

Kentucky's Forestry Sectors Impact $Millions (direct)



Source: IMPLAN Analysis of 2011 data adjusted for 2013 using 2013 forestry sector employment

Forestry Sub-Sectors

The forestry sector encompasses a wide range of industries including logging, primary that includes sawmilling, secondary industries that manufacture finished wood products; pulp and paper production; paper converters that manufacture paper products; and residues such as bark mulch. All sub-sectors are improving in 2013 with the exception of paper converters that are losing 1% due to decreases in paper consumption.

Commodity Pricing

Delivered log prices rose as a whole over 11% in the first two quarters of 2013, with many important species such as yellow-poplar and red oak experiencing much needed increases. Other commodities such as railroad tie logs and pulpwood showed small increases in prices in 2013. In 2013, stave logs maintained their relatively high values of $875 per thousand board feet reached in 2012.

Kentucky Grade 1 Sawlogs

Species	2012	2013	2013 (2nd Qtr. $/MBF) Delivered Price
Black Walnut	-15%	+3.5%	$1,131
White Oak	-13%	+3%	$675
Cherry	-28%	+33.5%	$656
Red Oak	Flat	+5.5%	$570
Hard Maple	Flat	-15%	$556
Ash	-1%	+12%	$456
Yellow-poplar	-5%	+50%	$337

Source: Kentucky Division of Forestry Growing Gold

2014 Outlook

The outlook for 2014 is encouraging. Demand and prices should remain good for sawlogs including important species such as red and white oak. Housing starts indicate that yellow-poplar used for trim and cabinetry construction will also maintain value and demand in 2014. Tie and stave log demand should remain stable or improve in 2014. Pulpwood demand and prices in Kentucky should be stable in 2014 unlike paper converters that are predicted to lose revenues in 2014. The wet weather in 2013 has log inventories low in some regions resulting in a seller's market moving into 2014. The logging sector continues under stress due to the high cost of parts and fuel. However, improvement in markets should help this sector. In general, projections are for improvement in most forestry sectors in 2014, including markets for timber.

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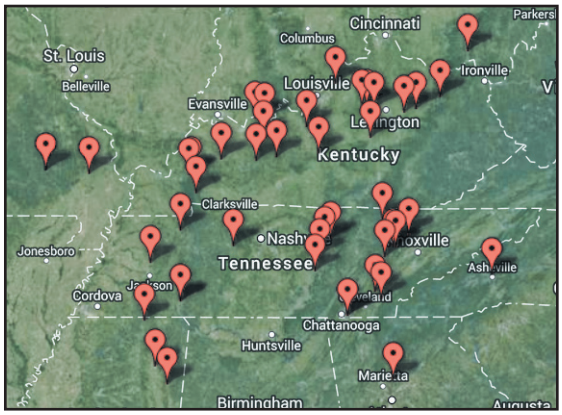
and **University of Kentucky, Department of Agricultural Economics** - *Alison Davis, Associate Extension Professor*

A Different Approach to Forest Certification

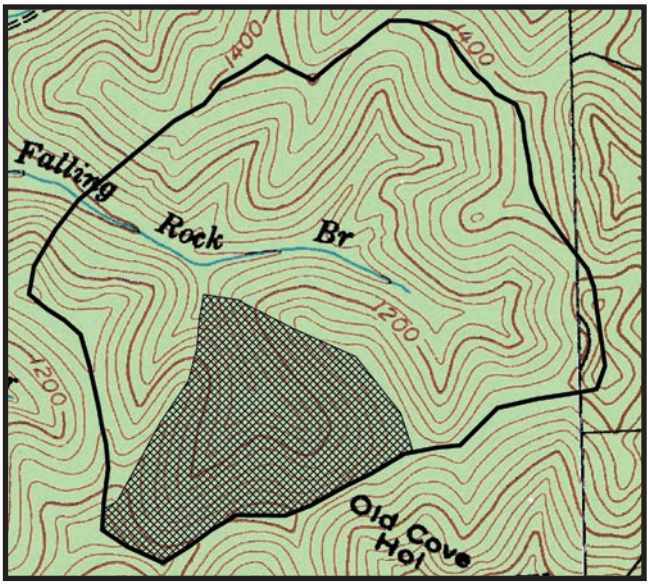
by Christopher Reeves

The main requirement for any forest management certification system (American Tree Farm System®, Sustainable Forestry Initiative®, and Forest Stewardship Council™) is to have a management plan for the woodlands. However, situations commonly arise in which a woodland owner must quickly sell their timber to pay for unexpected events or to take advantage of rising stumpage prices. In these situations the preparation of a full traditional management plan may not be practical because of time and financial constraints. But how does a woodland owner get certified without a traditional management plan? That's where the Progressive System can assist woodland owners.

The Progressive System is a new program developed by the Center for Forest and Wood Certification for family woodland owners (< 2,470 acres). This innovative program allows for woodland owners to get involved in certification quickly without developing a traditional comprehensive management plan. The process begins with a woodland owner selecting a Center-trained Cooperating Forester and completing an application to enroll in the program. Cooperating Foresters are consulting foresters and in some cases industry foresters that have been trained to help you through the certification process. This process is not complicated, but a trained forester's assistance is required. The Center will then retrieve rare, threatened, and endangered species data for the property from the state natural heritage agency and return it to the woodland owner and forester. The forester will then prepare a detailed harvest plan using Center-provided documentation that implements an appropriate woodland management practice for only the stand that is going to be harvested. The remainder of the property that is not going to be harvested must undergo a walkthrough. This walkthrough is essentially to check the rest of the property for any critical issues that are having a negative impact on the environment. The forester will be looking for major insect, disease, or storm damage; checking roads for sections that might be affecting water quality; or finding stands that are heavily infested with invasive species. The walkthrough is important to identify anything that might be needed to be addressed at a future time and to ensure that certification will not be held up because of the condition of the woodlands outside of the harvest area. The completed planning forms, including the harvest prescription and the results of the walkthrough, are then returned to the Center for review and if approved, certification can be granted.



The Center for Forest and Wood Certification has 45 cooperating foresters in nine states available to help woodland owners achieve forest certification. A complete list can be found at www.forestcertificationcenter.org/CF_List.



A detailed harvest plan must be prepared for the area planned to be cut (cross hatched area). A walk through of the rest of the property must take place to determine if any critical impacts to the environment are present that could delay certification.

Because the Progressive System allows for woodland owners to obtain certification without a comprehensive traditional management plan, woodland owners are required to use a logger that has demonstrated the capacity to carry out the harvest in a safe and sustainable manner. For this reason only participants in the Certified Master Logger Program may conduct the timber harvest under the Progressive System. These loggers are different from the Kentucky Master Loggers with which most woodland owners may be familiar. Kentucky Master Loggers have only been trained in logging safety, water quality, and use of Best Management Practices. Certified Master Loggers have not only been trained but have also been inspected

by independent third-party auditors to ensure that their on the ground performance matches their training. The logger's audited performance indicates that these Certified Master Logger Program participants can easily implement the harvest that meets any forest management certification standards. Coupling a Certified Master Logger, a Cooperating Forester, and a willing landowner allows for efficient and quick certification without having to immediately develop a traditional comprehensive management plan.

Once certification is initially granted a woodland owner has to obtain a comprehensive management plan that covers the entire property. This management plan is required within three years or before the next management practice is conducted including harvesting, planting and forest improvement work. Woodland owners can get any forester to prepare the plan as long as it continues to meet the certification standard. Woodland owners can request a management plan from their state forestry agencies or use the proceeds from the timber sale to have a private consulting forester complete the plan. If this full management plan is not completed for the rest of the property in the required three years the woodland owner will no longer be certified. Woodland owners are also not permitted to implement another woodland management activity (harvest, chemical usage, etc.) and remain certified until a management plan is completed for the rest of the property.

Another requirement is for woodland owners to pay for three years' worth of certification fees up front before enrollment through the Progressive System is permitted. Fees are based upon the total forested acreage (not just the harvested area). As an example, the cost for a woodland owner with 300 acres would be $130 including the $50 initial fee plus the next two years of $40 for annual fees. These fees demonstrate that the landowner is committed to long-term sustainable woodland management and will not immediately drop certification as soon as the initial harvest is completed.

Any harvest planning completed under the Progressive System still has to satisfy the standards of the American Tree Farm System and Forest Stewardship Council. This means that certification requirements still have to be right for the individual woodland owner and their management

Photo courtesy: Jeff Stringer

Certified Master Logger undergoing an onsite audit of his operation.

objectives. The biggest impediment for woodland owners is normally land use conversion. If a woodland owner plans on converting the woodlands to pasture land or row crops after it is harvested, certification cannot be obtained. The American Tree Farm System and the Forest Stewardship Council do not permit woodland conversion in their standards.

The Progressive System is potentially not useful for woodland owners that already have some form of a management plan. For example, if a woodland owner has a management plan that was prepared by a state agency service forester or a consulting forester, but it is ten years old, it is advisable to update the older management plan. It would generally be more cost effective to simply update the old management plan to include the harvest than to prepare new detailed harvest planning documentation and pay three years' worth of fees upfront. The Progressive System would also not be beneficial for a woodland owner where the harvest encompasses almost all the acreage that is owned. Woodland owners in this situation should prepare a full management plan because the required planning documentation of the Progressive System would be the same as completing a comprehensive management plan.

If you are interested in certification, but do not have a management plan and need to complete a harvest quickly, the Progressive System might be right for you. Please consult with your forester to determine if certification fits your objectives. More information can be found at www.forestcertificationcenter.org or by calling toll-free 855.579.2690.

About the Author:
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Kentucky Champion Tree Program

McCracken County's Giant Sentry

by Diana Olszowy

Chances are you've noticed that one consistent characteristic is shared by all champions featured in this magazine, and that is they are growing in their ideal growing conditions. Most folks would envision that to be in a deep, rich soil near a stream on a north-facing slope, but this is not necessarily the case. Our featured champ for this issue actually prefers dry, upland sites with shallow, coarse-textured soils that are deficient in nutrients and organic matter. Many urban soils can also be included into this site characteristic, which is where you'll find our State Champion post oak. This champ measures over 175 inches in circumference, (that's over 14½ feet around), stands 95 feet tall, and proudly watches over the McCracken County Courthouse.

Post oak is widespread in the Eastern and Central United States, from southeastern Massachusetts and New York, south to central Florida, and west to Kansas, Oklahoma, and Texas. Its wood is durable and resistant to decay, and the tree gets its common name from its use in making posts, railroad ties, flooring, etc. It is often found with chestnut oak, blackjack oak, eastern redcedar and several varieties of pines. It is intolerant of shade and competition, is resistant to drought, but not to flooding, which makes it a good tree for soil stabilization projects and for urban landscapes.

Native Americans produced infusions of the astringent bark to treat a variety of ailments from chapped skin and sores to dysentery. Post oak begins acorn production at about 25 years of age, and good crops occur at two- to three-year intervals. The acorns are eaten by many species of wildlife, including squirrels, deer, and turkey, but are toxic to sheep, cattle, and goats due to the high tannin concentration. Post oak is a member of the white oak family, which means the acorns germinate in autumn soon after falling. The leaves display lobes that are longest toward the front of the leaf, giving it a top-heavy look – often referred to as looking like a "cross."

Post oak is a resilient species that is able to grow in tough sites, and our State Champion post oak is no exception.

Above photo courtesy: Kentucky Division of Forestry

Post oak is a close relative of white oak, but rarely does its wood have the same quality of its cousin. The bark of post oak is similar to white oak, but will often have a rougher appearance and more defects. Post oak leaves will typically have a cross shape as compared to white oak. The acorns (upper left) are consumed by many species of wildlife, but can pose toxicity issues to livestock.

Leaf photo courtesy: Chris Evans, Illinois Wildlife Action Plan, Bugwood.org
Bark photo courtesy: Vern Wilkins, Indiana University, Bugwood.org
Acorns photo courtesy: Franklin Bonner, USFS (ret.), Bugwood.org

About the Author:
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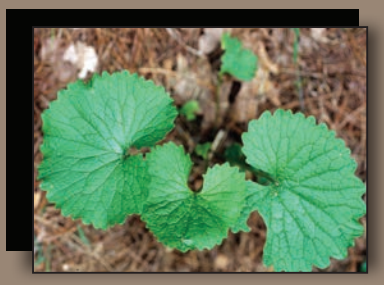
Test Your Knowledge

Submit your answers at www.ukforestry.org The randomly selected entry of those with the most correct answers will receive a free copy of Identifying Kentucky's Forest Trees.

1. Woodlands are under a continuous threat of invasion by invasive plant species. Oftentimes, these plants have assistance, albeit unintentional, in reaching new areas. Which of the following are least likely to contribute to the spread of most invasive plant species?

a) People
b) Wildlife
c) Wind



Hint: See article on page 1.

2. The Kentucky Champion Tree Program article features post oak in this issue. Post oak acorns are an important food source for many species of wildlife. At what age does acorn production typically begin for post oak trees?

a) 5 years
b) 15 years
c) 25 years
d) 35 years

Hint: See article on page 22.

3. The Natural Resources Conservation Service (NRCS) has a number of financial assistance programs available to assist woodland owners offset some of the costs of managing their woodlands. To participate in the programs woodland owners must have a stewardship or forest management plan. If woodland owner does not have plan NRCS has a program that can help them get one. Which of the following is the acronym for that program?

a) EQIP
b) CAP-FM
c) TSP
d) CREP

Hint: See article on page 6.

4. Soil scarification can help oak-seedling establishment following a large acorn crop and can serve as an important tool in the "toolbox" of woodland owners. Soil scarification typically involves the mixing of acorns into the upper layers of soil. This scarification uses equipment to disturb the upper _____ of leaf litter and soil.

a) 2 inches
b) 4 inches
c) 10 inches
d) 1 foot

Hint: See article on page 8.

Hint: See article on page 20.

5. The Center for Forest and Wood Certification (CFWC) works to remove barriers to forest and wood certification for family woodland owners and wood industries. Because the CFWC is a group member of the American Tree Farm System and the Forest Stewardship Council there are acreage limitations for family woodland owners to participate. Family forest owners with _____ are eligible.

a) < 1,130 acres
b) < 1,470 acres
c) < 2,130 acres
d) < 2,470 acres

Scan this code with your smartphone or tablet device to submit your answers.

kentucky WOODLANDS

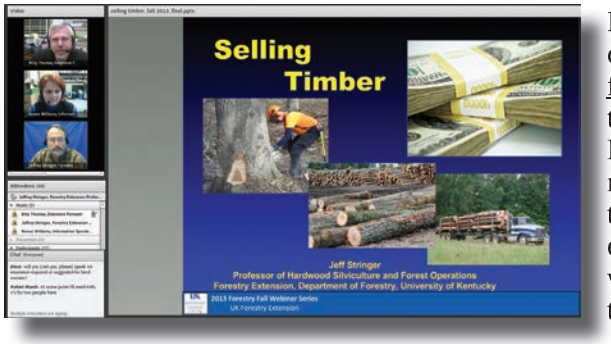
2013 Tax Tips for Woodland Owners

U.S. Forest Service specialists Linda Wang and John Greene have released their Tax Tips for Forest Landowners for the 2013 Tax Year. This annual bulletin is full of valuable information for woodland owners and those that work with them. Make sure to check out this important resource BEFORE you file your 2013 taxes and please pass it along to your tax preparer as well. You can get your copy by visiting www2.ca.uky.edu/forestryextension/PDF/TaxTips2013.pdf

Kentucky Barefoot Nature Photography Blog

Dr. Tom Barnes recently created a new blog that focuses on outdoor and nature photography. It will showcase the state of Kentucky, it's landscapes, habitats, wildlife, wildflowers and waterfalls. You can visit the page and sign up as a subscriber so you can see all the latest posts by visiting www.kentuckybarefoot-photography.blogspot.com

Forestry Fall Webinar Series Recordings ONLINE



If you missed the Forestry Fall Webinar Series this past fall you can check them out at your convenience by visiting www2.ca.uky.edu/forestryextension/fallwebinars.php. Webinars include: "Tree Identification", "Woodland Management and Forest Certification", "Waterfowl Identification", and "Selling Timber". All the webinars last approximately one hour and contain downloadable resources. When you finish the webinars please take a few minutes to click on and complete the evaluation link and let us know what you would like to see in future webinars. UK Forestry Extension will be offering additional webinars in the future—for the latest information please visit www.ukforestry.org

Thanks for Taking the Survey!

The team at Kentucky Woodlands Magazine would like to thank each of you who took the time to complete the recent survey about this magazine. We are currently processing the surveys and will share the results in the next issue. If you missed the survey but still want to share your thoughts about Kentucky Woodlands Magazine please e-mail forestry.extension@uky.edu or call 859.257.7597.

THANK YOU!
THANK YOU!
THANK YOU!
THANK YOU!

Upcoming Dates To Remember:

Date:	Event:	Location:	Contact:
March 22, 2014	Woodlands and Wildlife Workshop	General Butler State Resort Park	859.257.7597
March 31 - April 1, 2014	KWOA Annual Meeting	Pine Mountain, KY	kwoa.net
April 2 - 4, 2014	Kentucky Forest Industries Association Annual Meeting	Louisville, KY at the Seelbach Hilton	www.kfia.org 502.695.3979
through Nov. 2014	Kentucky Master Logger 3-Day Program Offerings	Across the state	http://dept.ca.uky.edu/masterlogger/3_day_program.php

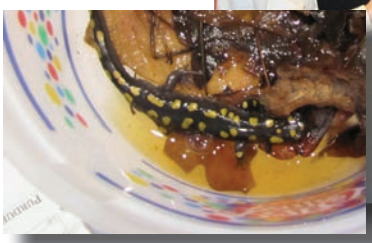
NEWS TO USE

Woodlands and Wildlife Workshop

Ohio River Valley
Woodland & Wildlife Workshop

Forestry and wildlife experts from the University of Kentucky, Kentucky State University, Ohio State University, and Purdue University will be leading a variety of presentations on forestry and wildlife topics and answering your questions. This workshop will take place on March 22 at General Butler State Park in Carrollton, Kentucky. The focus of this workshop is on providing educational opportunities for woodland owners, from those who are just getting started to those who are looking for more in-depth information. Those who attend will gain knowledge to use on their land, and they will become better stewards of their forest resources. Registration, which includes lunch and materials, costs $45 per person by March 14 and $55 after. For more information or to register please visit www2.ca.uky.edu/forestryextension/tristatewoods/tristatewoodsindex.html.

Photos courtesy: Renee' Williams



Participants at the 2013 Woodlands and Wildlife workshop were able to see what types of creatures live in their woodlands. Among other animals, participants where shown salamanders like the one above.

Emerald Ash Borer and Freezing Temperatures

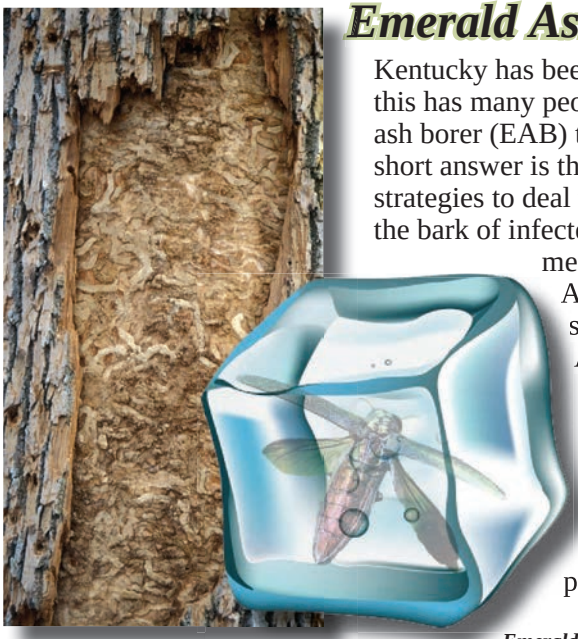


Photo courtesy: Daniel Herms, The Ohio State University, Bugwood.org

Kentucky has been experiencing some bitterly cold temperatures this winter and this has many people wondering what, if any, impact it will have on the emerald ash borer (EAB) that is continuing to spread across Kentucky. Unfortunately the short answer is that it will have little impact because the emerald ash borer has strategies to deal with cold weather. EAB larvae spend the winter underneath the bark of infected ash trees where they are largely protected from the elements. A recent study ("Cold Hardiness of Emerald Ash Borer: A New Perspective" by Robert Venette and Mark Abrahamson with the US Forest Service and Minnesota Department of Agriculture respectively) found that 34 percent of EAB larvae subjected to -10 degrees Fahrenheit died and the mortality rate climbed to 98 percent at -30 degrees Fahrenheit. Given that EAB larvae are insulated underneath the bark, and our temperatures have not been that low, there will be limited impact on EAB in Kentucky due to the temperatures we have experienced. For more information about EAB in Kentucky please visit http://pest.ca.uky.edu/EXT/EAB/welcomeeab.html.

Photo courtesy: Houping Liu, Michigan State University, Bugwood.org

Emerald Ash Borer larvae (right) are largely protected from extreme temperatures because they overwinter in the wood underneath the bark of infected trees.

Test Your Knowledge Review

Answers from KWM Vol. 8 Issue 2

1. b 4. d
2. c 5. a
3. b 6. a/b

Congratulations to J. Sansbury of Shepherdsville, KY who was randomly chosen from the entries from the last quiz. He will receive a free copy of Identifying Kentucky's Forest Trees.

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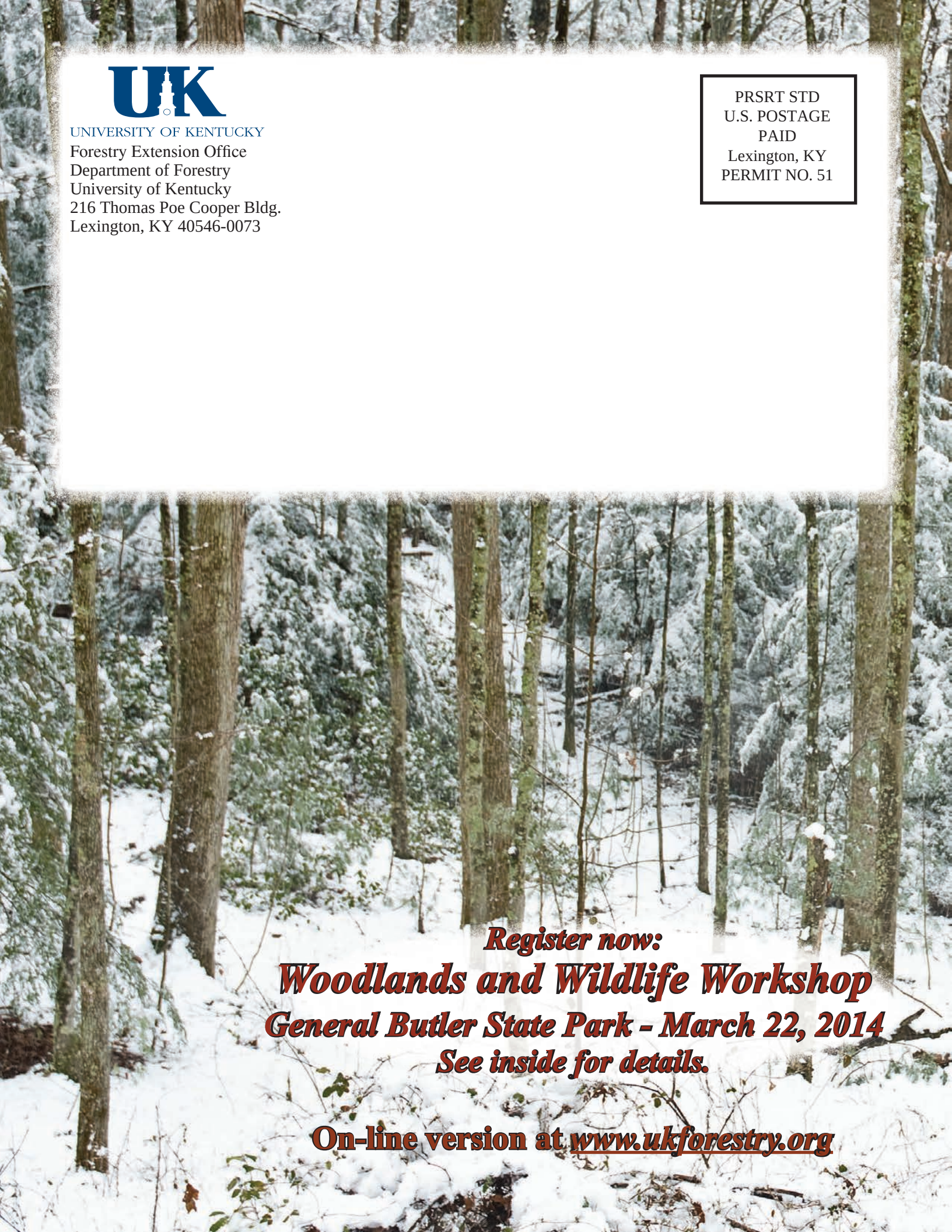

Register now:

Woodlands and Wildlife Workshop

General Butler State Park - March 22, 2014

See inside for details.

On-line version at *www.ukforestry.org*