

Kentucky Woodlands Magazine

Volume 4 Issue 3
December 2009

**Managing and Preventing
Woodland Degradation
Forestry 101: Woodland Terms
Certification Corner**

Kentucky Woodlands

Volume 4 Issue 3 Magazine

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

In this Issue...

Managing and Preventing Woodland Degradation	1
Low Cost Owner & Woodland Liability Insurance	8
Kentucky Tree Farm Committee Newsletter	12
Determining Timber Casualty Loss	14

Departments:

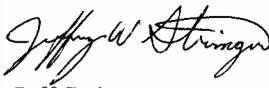
KWOA	6
Forest Health: Paulownia	10
Forestry 101: Woodland Terms	16
Non-Timber Forest Products: Pawpaws	18
Test Your Knowledge	20
Kentucky Champion Tree Program	21
Certification Corner	23
Kentucky Woodland News To Use	24

From the Editors of the Kentucky Woodlands Magazine:

Yet another rough year for our woodlands – from ice storms to little green bugs (Emerald Ash Borer) and from sluggish timber markets to ongoing economic woes; few will miss 2009. However in 2010 (good ole Roman numeral MMX), conditions are looking up! In this issue, “Managing and Preventing Woodland Degradation” will provide you some insight on how to revitalize your woodlands after it as been degraded by natural or two-legged forces. You will be introduced to many forestry terms (Part 1) that will better enable you to communicate effectively with your forester and you will learn about Kentucky State University’s pawpaw production project and where you can order your own pawpaws.

Also included in this issue, find out about woodland liability insurance in “Low Cost Hunter and Woodland Liability Insurance – Can you afford to be without it?” and learn how to “Determine Your Timber Casualty Loss” for your 2009 taxes. As always, this issue contains our standard departments covering Kentucky Champion Trees, Invasive Plant Hit List, Test Your Knowledge, KWOA Issues, Tree Farm Committee Newsletter, KY Woodland News to Use as well as a brand new section titled the Certification Corner.

We hope you enjoy and find useful the information in this issue of Kentucky Woodlands Magazine. Please let us know what you think about the magazine on the enclosed tear-out or online at www.ukforestry.org.


Jeff Stringer,
University of Kentucky
Department of Forestry


Diana Olszowy,
Kentucky Division of Forestry

About the Cover:

Brandon Howard, Kentucky Division of Forestry, contributed the cover photo of Kentenia-Cupp Lake which is a small, man-made lake located in the Kentucky Division of Forestry's Kentenia State Forest. It is located in Harlan County near the top of Pine Mountain and became a part of the state forest in 1998. Kentenia is the oldest state-owned forest, acquired in 1919 as a gift from the Kentenia-Cantron Corporation. The forest is open to the public for hunting and fishing and subject to state fish and game regulations. Primitive camping, hiking, picnicking and horseback riding are also permitted. ATVs are prohibited.

Managing Editors:

Jeff Stringer
 Cooperative Extension Service
 University of Kentucky
 Department of Forestry

Diana Olszowy
 Kentucky Division of Forestry

Associate Editor:

Billy Thomas
 Cooperative Extension Service
 University of Kentucky
 Department of Forestry

**Assistant Editor,
 Advertising & Graphic Designer:**
Reneé Williams

Cooperative Extension Service
 University of Kentucky
 Department of Forestry

Proofreading and Web Support:
 University of Kentucky
 Agricultural Communications Service

Volume 4 Issue 3

Kentucky Woodlands Magazine is published under the direction of the University of Kentucky's Department of Forestry Extension and the Kentucky Division of Forestry and is sponsored by the Kentucky Forest Stewardship Coordinating Committee. Kentucky Woodlands Magazine is supported by funds from the Kentucky Forest Stewardship Program, U.S. Forest Service, Renewable Resources Extension Act, and the Cooperative Extension Services. Views and opinions expressed in the Kentucky Woodlands Magazine do not necessarily represent the opinions of its editors, the UK Department of Forestry or the Division of Forestry. The appearance of a logo, organization, manufacturer or product within the magazine does not constitute an endorsement by the editors, the University of Kentucky Department of Forestry or the Kentucky Division of Forestry.

Change of Address and Other

Magazine Business:
 Forestry Extension Office,
 Department of Forestry,
 University of Kentucky,
 216 Thomas Poe Cooper Bldg.,
 Lexington, KY 40546-0073
 859.257.7597
 E-mail: billy.thomas@uky.edu
www.ukforestry.org

Duplicate mailings:
 For duplicate mailings, please
 send both mailing labels to the address above.



Forestry Extension Office
 Department of Forestry
 216 Thomas Poe Cooper Bldg.
 Lexington, KY 40546-0073
 859.257.7597
www.ukforestry.org



Kentucky
 Division of Forestry
 627 Comanche Trail
 Frankfort, KY 40601
 502.564.4496
www.forestry.ky.gov



Photo courtesy: Susan Fox

Managing and Preventing Woodland Degradation

by Jeff Stringer

Woods cover a significant percentage of Kentucky's landscape. They contribute greatly to our enjoyment and financial well-being as individuals and as a state. Given this fact, it is ironic that data indicate the majority of woods have been historically mismanaged and abused, and unfortunately, they continue to be so. The majority of this abuse is not through malicious intent but rather through lack of attention and ignorance. In your capacity as a woodland owner, natural resource professional, logger, or an individual who cares about Kentucky woodlands, do you know what constitutes abuse? Do you know the signs of this abuse and how to fix it?

Abuse leads to degradation. Simply put, degrading the woods means letting it get to a condition where it does not fully meet our objectives and has lost or is losing its ability to maintain growth, vigor, and regeneration of its naturally occurring species. This article outlines the different types of degradation that reduces the health and resiliency, timber value, and habitat quality for wildlife of our woodlands as well as our ability to maximize ecosystem services.

A number of abuses both past and present are occurring in our woodlands. Each of these abuses when occurring with enough frequency and intensity can degrade woodlands significantly. Undoubtedly, the majority of woods in Kentucky has been or is being affected by uncontrolled harvesting, wildfire, grazing, invasion by exotic species, aging, and a host of natural occurrences such as insects and disease outbreaks, storms, and droughts. Each of these degrades specific aspects of our woodlands. Understanding these abuses and their characteristics, some of which are blatantly obvious and some that are insidious, helps us to chart a course for preventing degradation and restoring damaged woodlands.

Uncontrolled Selective or Partial Harvests

The majority of timber harvesting that occurs in Kentucky is selective harvesting (see reference 1). While selective har-

vesting can be correctly done, it requires marking by a professional and harvesting by a conscientious and competent logger. The majority of selective harvests, over 80 percent in Kentucky, are not undertaken with an eye to improving the woods for the long term. Practices such as high-grading that remove only the best-quality timber not only "mines" the good-quality trees from the woods, reducing the potential timber value, but also removes valuable species, such as the oaks, that produce hard mast for wildlife. Once a woods is selectively cut using a high-grade two or three times, it can functionally lose its ability to generate timber income for a long period of time. Further it may have lost species that

are important from a wildlife, ecosystem and timber standpoint that cannot easily be restored. A poor logger can also injure remaining trees in a selective cut that leads to long-term internal rot and loss of timber value. While the presence of some rotten trees and snags in a woods can be good for some wildlife species, studies in Kentucky and adjoining states have shown that inattentive logging can result in the damage of up to 25 percent of the sawtimber-sized trees and 50 percent of the pole-sized trees in a woods. However, these same studies have shown that loggers can easily keep damage to below 10 percent if logging is done with care. Correct selective harvesting typically involves the removal of economically mature timber (if revenue is an ownership objective) as part of an improvement harvest that also removes poor-quality trees and includes provisions for regeneration.

Considering regeneration when implementing a selective harvest is critical. It is important to make sure that nothing is done in the woods that reduces its ability to adequately regenerate now or in the future (Table 1). For example, harvesting all the mature oak trees from a stand may leave the stand with no way to regenerate oaks, especially if there are no seedlings, saplings, or pole-sized oak trees of that species in the woods. A properly planned selective harvest would ensure

Photos other than those noted, courtesy Jeff Stringer.

that some of these “mother” trees are left to produce acorns for future regenerations. In some cases, there may be pockets where overstory trees are all mature or overmature. Removing them and allowing for a pocket of natural regeneration to develop in what is called a group opening can aid in maintaining a diversity of age classes and species and actually improve habitat for some wildlife species.



Photo courtesy: Steve Gray, Kentucky Division of Forestry

Basal wounding and rot developing from skidding damage 15 years ago.

Uncontrolled Commercial Clearcuts

Commercial clear cutting, the removal of all trees greater than six inches in diameter and up, occurs in areas where there is a pulpwood market and will likely occur where some biomass markets emerge. Commercial clear cutting can be used as a tool to rehabilitate some natural stands that have been significantly degraded when a new age class is required to reestablish proper species composition and growth. However, uncontrolled commercial clear cutting can negatively change species composition, reduce the presence of hard mast species, allow for invasion by exotic species, and degrade wildlife habitats for some species (Table 2). As is the case with selective harvesting, it takes a knowledgeable professional to be able to prescribe the proper size, timing, and conditions under which a commercial clearcut can be used appropriately to regenerate a woods. A professional forester will also know when an alternative regeneration method such as group openings, group selection, shelterwood, or a two-age

Table 1. Uncontrolled Selective or Partial Harvests

Region: all counties in Kentucky	
Woods at risk: all stands with high-quality sawtimber trees	
Characteristics	Results
<ul style="list-style-type: none"> removal of only high-value sawtimber trees (high-grading) 	<ul style="list-style-type: none"> loss of future timber value potentially to the point of rendering the woods unmerchantable
<ul style="list-style-type: none"> leaving poor-quality and/or noncommercial species 	<ul style="list-style-type: none"> loss of important species
<ul style="list-style-type: none"> removal of hard mast species (e.g., oaks, walnut) 	<ul style="list-style-type: none"> reduction in valuable wildlife food source reduction in overall biodiversity and loss of important species
<ul style="list-style-type: none"> partial cut leaving greater than 50% of the trees standing 	<ul style="list-style-type: none"> prevents regeneration of species requiring light such as walnut, oak, yellow-poplar, ash, and increasing maple, beech, and other species that can tolerate the shade
<ul style="list-style-type: none"> skidding and felling damage 	<ul style="list-style-type: none"> increasing heart-rot and long-term loss of timber volume and value
<p>Prevention: Have a forester mark a selective harvest that includes improvement of the woods and maintenance of proper regeneration. A wildlife biologist can aid in the development of a harvest plan if wildlife is a primary objective. Select a good logger who provides references to woodland owners where selective harvests have been completed. Consulting foresters can be used to develop a timber harvesting contract that includes provisions for protecting trees that will not be harvested.</p>	

Table 2. Uncontrolled Commercial Clearcut

Region: regions where pulpwood or biomass markets exist	
Areas at risk: all stands	
Characteristics	Results
<ul style="list-style-type: none"> removal of all commercial trees greater than 5 to 6 inches 	<ul style="list-style-type: none"> opening stands allows for abundant regeneration of fast-growing species that can outcompete slower-growing oaks and other important species unless provisions for their regeneration have been taken into account habitat loss for some wildlife species through the loss of mature tree cover and loss of large woody debris establishment of new age class provides habitat and food for some early successional species
<ul style="list-style-type: none"> unrestricted whole tree skidding 	<ul style="list-style-type: none"> disturbance of the litter or duff layer over large areas can enhance invasion by exotic invasive species reduction in advance regeneration (naturally produced sapling and seedlings) of some species such as oaks
<ul style="list-style-type: none"> removal of all woody biomass including tops 	<ul style="list-style-type: none"> long-term nutrient depletion
<p>Prevention: Have a forester lay out the size and shape of harvest areas and provide the correct timing to help with regeneration of the desired species. Conduct post-harvest practices such as site preparation for natural regeneration that remove noncommercial species and damaged trees that remain or potentially provide the planting of some species such as pines where appropriate. These practices can be potentially paid for in part by farm programs. Provide conditions associated with the harvest and removal of treetops that ensure that an appropriate number of tops stay in the woodlands for their nutrients and minimize the skidding disturbance in areas where a large amount of advance regeneration is present.</p>	

deferment harvest should be employed to allow for regeneration and protect other aspects of the woods. A forester can also recommend treatments that can be done in association with a commercial clearcut to remove undesirable trees from the stand after harvest and provide more room for valuable trees to establish and grow.

Wildfire

Uncontrolled burning can lead to long-term degradation of the woods (Table 3). Unfortunately, many believe that as long as a fire does not kill the large trees in a woods, then no harm was done. However, even many of our ground fires, while they do not kill large trees, wound standing timber causing long-term internal rot and loss of timber value. Studies have shown that wildfire wounds greater than 13 inches across in sawtimber-sized trees can lead to long-term timber volume losses of 100 to 200 board feet per tree. For many trees, this

is a significant amount of their total potential volume and value. Uncontrolled fires, regardless of their severity can also lead to changes in regeneration and provide a seedbed for the invasion by exotic species. While every county in Kentucky has the potential for wildfires, woodlands in eastern Kentucky are under more risk because of the severe slopes that cause wildfires to become intense as they race uphill and the difficulty in fighting fires in this rough terrain. Also, where storm damage has created large amounts of fuel, woods are at risk from intense wildfires (see reference

2). While it is now known that historical fires played a part in shaping the species composition of our woodlands and prescribed fires can be used to manage some of our woodlands

for some objectives, a prescribed or managed fire is far different from uncontrolled wildfires that currently happen all too often in Kentucky.

Grazing

Historically, it was very common for cattle, hogs, horses, goats, and other livestock to graze the woods. A few head on a large number of acres was not problematic. However, the majority of farms allowing cattle access to the woods have the potential of significantly reducing natural regeneration and produce internal rot in standing timber trees, unnoticeable until the trees are cut down (Table 4). Studies have shown past woodland grazing can result in up to nearly a 50 percent reduction in timber values. Removing cattle and other livestock from the woods is one of the first prerequisites for good woodland management.

Table 4. Grazing	
Region: regions associated with the cattle industry	
Areas at risk: stands open to unrestricted access by cattle and other livestock	
Characteristics	Results
<ul style="list-style-type: none"> perpetual browsing and consumption of small seedlings and saplings 	<ul style="list-style-type: none"> stopping the development of natural regeneration required to maintain some tree species, especially oaks and species tolerant of the shade such as maple and beech
<ul style="list-style-type: none"> compacting soil and wounding of lateral roots 	<ul style="list-style-type: none"> internal rot of standing trees and loss of timber value
Prevention: Fence off woods and remove cattle and livestock. Do not feed in the woods or use the edge for feeding.	

Table 3. Wildfire	
Region: all regions, with eastern Kentucky counties most susceptible	
Areas at risk: all stands; especially at risk are drier sites such as south- and west-facing slopes and ridge tops	
Characteristics	Results
<ul style="list-style-type: none"> basal wounding to sawtimber- and pole-sized trees 	<ul style="list-style-type: none"> long-term development of heart rot leading to hollow trees and loss of timber value
<ul style="list-style-type: none"> death of small trees and exposure of mineral soil 	<ul style="list-style-type: none"> can allow for the regeneration of species that stump and root sprout well exposed mineral soil makes possible regeneration of species from seed including invasive exotics
Prevention: Have a forester indicate areas at risk from wildfire. Develop a set of fire lines or fire roads that provide natural fire breaks at the edge of the woodlands and maintain them during the fall before the fire seasons. Assess areas where there is a large amount of debris on the ground and get the debris touching the ground where possible to aid in its rotting and decrease its burning potential. Make sure neighbors abide by burning bans during fire seasons.	



Fire damage leading to severe heart rot.



Compare seedling and sapling abundance on left side of the road where grazing is allowed to the right side of the road that has been fenced, precluding grazing for 15 years.

Aging

Many woods have canopy or overstory trees that developed from past events such as a major timber harvest or abandonment of a field. These events created a roughly even-aged group of trees that have continued to grow into the large canopy trees that are now present (Table 5). Each species of tree has a particular age that it normally reaches before starting to decline and eventually dying (Table 6). As the canopy trees reach this age, they become more susceptible to insects and diseases, droughts, and other natural disturbances. If the overstory of a woodland is composed of a significant number of short-lived species, canopy trees may start to die rather dramatically over a 10- to 20-year period. While this is natural, it does cause concern through the

loss of timber value and aesthetics. If this mortality is viewed as problematic, a harvest of selected trees can be accomplished to reduce value loss and manage the dying overstory. If management is aimed at providing for old-growth forest, a plan should be developed to deal with the gaps created by the loss of short-lived trees. While small gaps are a part of an old-growth forest and provide positive wildlife attributes, gaps can also lead to invasion by exotic species, and a plan to scout for and eradicate invasive species should be developed. Further, short-lived species can be removed prior to their death to help manage the situation and provide for increased vigor of long-lived species.

Table 5. Aging	
Region: all counties	
Areas at risk: all stands, particularly those with even-aged stands of short-lived species	
Characteristics	Results
<ul style="list-style-type: none"> canopy trees reaching their biologic maturity 	<ul style="list-style-type: none"> increased tree mortality and loss of canopy trees creation of canopy gaps inability of trees to weather injury and insect and disease attacks loss of timber value due to heart rot and injury development
Prevention: Foresters can assess the woods' relative age. Harvests can be used to remove aged trees when appropriate where timber value is an issue. Also, regulating tree density using thinning can improve individual tree vigor. Where timber is not an issue, developing a plan to scout for and remove invasive exotic species that establish into naturally occurring gaps is recommended.	

Table 6. Average life spans of tree species common to Kentucky.	
Species	Average
white oak	194
beechn	168
sugar maple	162
northern red oak	151
chestnut oak	141
shagbark hickory	137
yellow-poplar	136
bitternut hickory	133
black walnut	131
white ash	129
black oak	129
mockernut hickory	127
pignut hickory	117
black cherry	115
shortleaf pine	110
red maple	106
scarlet oak	105
Virginia pine	76
sassafras	69

Insects, Disease, Storms, and Droughts

A host of natural disturbances can cause degradation of woodlands (Table 7). Insects and disease pathogens occasionally increase in abundance and can kill and weaken trees. Droughts typically reduce the vigor of trees, and several years of drought or, in some cases, a significant single drought can cause individual trees to become weakened and susceptible to insects and diseases that they succumb to (see reference 3). Wind and ice storms can uproot trees and damage crowns. In some instances, these occur to a significant extent and with enough intensity to provide long-term growth reductions, changes in species composition, and loss of value (see reference 4).



The two-lined chestnut borer attacks oaks that have been damaged by drought or are otherwise in decline. The larva tunnel under the bark and disrupt the flow of 'food' and water.

Photos above courtesy: Larvae: Robert A. Haack, USDA Forest Service, www.forestryimages.org Adult: USDA Forest Service - Northeastern Area Archive, USDA Forest Service, www.forestryimages.org

Table 7. Insects, Disease, Storms, and Droughts	
Region: all counties	
Areas at risk: all stands	
Characteristics	Results
<ul style="list-style-type: none"> death or weakening of individual trees in small groups 	<ul style="list-style-type: none"> loss of timber value potential invasion of exotic species if canopy gaps are large enough
<ul style="list-style-type: none"> physical damage to canopy trees 	<ul style="list-style-type: none"> openings in the canopy can increase invasion of exotic species some insects and diseases can proliferate in damaged trees loss of timber value
Prevention: Natural disasters cannot be predicted. However, maintaining proper density of trees can improve their overall health and vigor. Removal of aging trees and susceptible trees with a timber harvest can improve growing space and vigor of remaining trees. Use a forester to provide assessment of the condition of woods and recommend practices to improve tree health allowing them to weather disturbances better.	

Summary

Most degradation can be eliminated or reduced to a manageable level through good woodland management and the use of professional foresters, wildlife biologists, and careful loggers. Understanding how woods are degraded and how to protect them is an important part of taking care of woodlands. Management of some type is required regardless of whether your objective is timber production or developing an old-growth woods. Unfortunately, in this day and time with the presence of exotic invasive species and other pressures on our woods, benign neglect (the decision to do nothing) is sure to lead to long-term degradation. A good place to start your planning, regardless of your objective is by contacting the Kentucky Division of Forestry to help develop a Stewardship Plan or to renew an old plan. Discuss issues of past abuse with your forester and ensure that in your use of the woods that you are not adding to the problem.

Kentucky Woodlands Magazine References:

www.ca.uky.edu/KYWoodlandsmagazine/Past.php
Click on the issue to locate the title you wish to view.

- (1) "Selective Harvesting" Part 1 and 2, Kentucky Woodlands Magazine, Volume 3 Issue 2: 1-3 and Volume 3 Issue 3: 1-3
- (2) "Wildfire and Woodlands: Assessing and Reducing Risk", Kentucky Woodlands Magazine Volume 4 Issue 2: 1-4
- (3) "Woodland Health" Kentucky Woodlands Magazine Volume 4 Issue 1: 1-4, "Evaluating Ice Damage" Kentucky Woodlands Magazine Volume 4 Issue 1: 6-7
- (4) "Tree vigor" Kentucky Woodlands Magazine Volume 2 Issue 2: 8-9 and "Spring freeze, summer drought, and our woodlands future" Kentucky Woodlands Magazine Volume 2 Issue 2: 1-3

About the Author:

Jeff Stringer, Ph.D., is a hardwood extension specialist at the University of Kentucky and is responsible for continuing education and research in hardwood silviculture and forest operations. He is also an editor of the Kentucky Woodlands Magazine.

Cooperative Extension Service, Department of Forestry, University of Kentucky, 201 Thomas Poe Cooper Building, Lexington, KY 40546-0073; Phone: 859.257.5994; Fax: 859.323.1031; E-mail: stringer@uky.edu

Advertisements

The Kentucky Woodlands Owners Association is focusing our efforts on the passage of meaningful legislation to benefit woodland owners. Last year during a short legislative session, we were able to get one bill completely through the House and passed through the Senate committee. With this year's longer legislative session, we hope that our efforts will find fruition.

There is a general consensus among woodland owners about the problems we face, but we are a widely varied group. We agree on problems, but we prioritize them differently. At KWOA, we are all volunteers, so we have to be realistic and try to pursue legislative goals that actually have a chance of becoming law. With the current state of our commonwealth's finances, it is squandering valuable time trying to push through legislation that will require financing from the state. The following are legislative initiatives that we believe have a reasonable chance of passage.

Forest Health Task Force

With Kentucky's fiscal situation in mind, KWOA is making plans to reintroduce the Forest Health Task Force bill in the 2010 session. This legislation was one vote away from becoming law in the short 2009 session. It should have an excellent chance of getting passed in 2010. The members of this task force are already state employees or are volunteers.

"Bad Actor" Laws

We have been working with our partners and the Attorney General's office to find a means for law enforcement and prosecutors to fund their pursuit of timber theft cases by establishing seizure and forfeiture laws. Besides financing investigation and prosecution, the monies generated could also be used to provide victims with restitution. We also are working on strengthening the current "bad actor" laws. Bad actors are loggers who have been cited by the Kentucky Division of Forestry (KDF) because they repeatedly refuse to use best management practices established by the Forest Conservation

Act when logging. KDF currently has the power to shut their operations down and to issue them monetary fines. Most of the fines go uncollected because there is no mechanism to ensure collection. Instead of bringing more financial burden to Kentucky, these measures could actually put money in the state's coffers.

Future Initiatives

Timber theft and arson legislation has been before the legislature for many sessions but has never been resolved. The problem with timber theft and arson is not a lack of laws. There are adequate statutes on the books concerning timber theft and arson. The problem is the lack of financing for law enforcement to investigate and for prosecutors to try these cases. The ultimate solution would be a Timber Theft/Arson Investigative Unit. The initial cost to start such a unit has been estimated to be \$1.2 million with operating costs in subsequent years to be \$600,000. With Kentucky's current budget woes, the chance of getting this legislation passed is slim to none. KWOA continues to remind legislators that this is the ultimate solution in hopes that when the budgetary problems ease, they will be prepared to pass legislation establishing this unit.

We will keep our members up-to-date concerning our legislative efforts via e-mail and with postings on our Web site at www.kwoa.net.

Betty Williamson, President
Kentucky Woodland Owners Association
270.821.8657
bettykwoa@bellsouth.net

**Don't forget to attend our
Annual Meeting held
April 16 - 17, 2010.**

**See our ad on page 7
for more information.**

2010 KWOA ANNUAL MEETING

Barren River Lake State Resort Park

April 16 - 17, 2010

Friday, April 16

Woodland Management Field Trip and demonstrations, reception and dinner.

Saturday, April 17

Learn more about carbon credits, invasive species, forest certification,
and receive updates from Kentucky forestry organizations.

Participate in the 2010 annual meeting and election of board members and officers.

The \$35 registration fee can be submitted on-line via PayPal at www.kwoa.net or mailed to:
Kentucky Woodland Owners Association, 1483 Big Run Road
Wallingford, KY 41093

Need more information? Call KWOA at 606.876.3423.

Please make your room reservations separately at Barren River Lake State Resort Park,
1149 State Park Road, Lucas, KY 42156-9709 Phone: 270.646.2151 / 800.325.0057

A limited number of rooms and cottages have been reserved for KWOA on a first come, first serve basis.
When making your reservation please state that you are attending the KWOA MEETING.

Low-Cost Hunter and Woodland Liability Insurance: How Much Can You Afford to Lose?



A locked gate and "No Trespassing" sign may not be enough to protect woodland owners from liability claims if someone is injured while on their property regardless if the injured party was invited or not.

by Keith A. Argow

Many woodland owners believe that any liabilities arising from a lawsuit by someone injured while on their property are covered by their homeowners insurance policy. A comforting thought, but not a reason for comfort. It is possible that your homeowners insurance does not cover your woodlands at all.

Landowners have long recognized the need for insurance to protect their home and property. In generations past, farm insurance generally covered more common risks to woodlands and fields. But as people have moved off farms and the farms themselves have reverted to woodlands, both the insurance coverage and risks have gradually changed.

A recent survey of members of the National Woodland Owners Association revealed most were unsure of the extent of their insurance and whether their woodlands were fully covered or not. To find out if your woodland

is covered, ask your agent. You may discover that instead of a "yes" or "no," the answer is "it depends." That should be a red flag to any family. It amounts to an unknown and uncovered risk. Some families are purchasing additional hunter and woodland liability insurance for security and peace of mind.

Landowner Liability Laws Exclude "Willful Neglect"

All states have insurance laws, but they vary by state.

Moreover, details of insurance policies vary by company. About 25 years ago, at the urging of state fish and wildlife agencies, legislatures enacted laws intended to limit the liability of landowners who allow free public hunting, fishing, and recreation on their private land. Kentucky has such a law (see www.lrc.state.ky.us/KRS/411-00/190.PDF). Like most states, that protection does not apply if you charge a fee for hunting, even if it is

Common Misconceptions about Landowner Liability

- My homeowners policy covers my woodlands. *Maybe, maybe not.*
- A personal catastrophe policy will cover my woodlands. *Verify that.*
- I have my woodland in a limited liability corporation (LLC). *An LLC is still liable for any award up to the value of the land, timber, and assets involved.*
- Liability lawsuits are rare in my experience. *Don't be the first to get one.*
- If I own land in others states, I am still covered. *Probably not.*

just enough to cover property taxes.

The enactment of landowner liability limitation laws persuaded many landowners to open their lands, some with the belief that they are “exempt” from liability. The truth is, their liability may be limited, but landowners are never exempt.

The landowner liability laws in every state do not apply if a case for “willful neglect” can be made. Experienced

liability attorneys allege “willful neglect” on the part of the landowner to successfully skirt the liability limitation laws. If they are successful in persuading the jury, or a judge, that you knew in advance of a danger on your land and did nothing, you can be held accountable for the injuries, lost work, human stress, or even death of the plaintiff.

Since vacant land and hunter liability insurance came on the market 20 years ago, many people have purchased it. The policies generally do not cover buildings. Should you be served with a summons to court, your first call is to your insurance carrier. You do not have to find an attorney on your own and worry if he or she is experienced in liability litigation. Remember, the plaintiff’s attorney is likely very experienced and may be taking the case without charge in return for a share of the award. Do you really want to roll the dice?

How Do I Protect My Woodlands from “Known Hazards”?

- Cover cable or chain gates with white PVC pipe. Flag tape may not be enough. ATV riders using your land with or without your permission are a real liability.
- Post warnings above steep walls or cliffs.
- Remove hazard, leaning, or large trees with dead limbs.
- Cover old wells.
- Warn of deep water in ponds, especially if man-made.
- Level unstable log piles.
- Post or drain streamside areas. Be careful not to violate wetland protection laws in the process.
- Cut and remove exposed roots. Roots have been alleged to have been hazards known to the landowner.

About the Author:

Keith Argow, Ph.D., is the president of the National Woodland Owners Association. He was a forestry professor at N.C. State and Virginia Tech. He is the author of numerous publications in forestry and public policy and has served on many national boards and commissions and has held the position of President of American Resources, Inc, a nationwide conservation service organization since 1981.

National Woodland Owners Association; 374 Maple Ave. Suite 310 Vienna, VA 22180; Phone: 703.255.2700; Fax: 703.281.9200; E-mail: argow@nwoa.net

Forest Health

Invasive Plant Hit List: Paulownia



by Jeff Stringer

Paulownia is a genus that is composed of a number of species, all relatively similar in appearance. They are all native to China, produce abundant seed, and grow rapidly. While all of the Paulownia species will grow in the United States, *Paulownia tomentosa*, often referred to as Paulownia, royal Paulownia, princess or empress tree, became established in Kentucky in the 1800s and has naturalized throughout the Commonwealth.

Paulownia tomentosa was prized as a flowering ornamental in Europe where it was named after a Russian princess (thus, the root of the name) and brought to the east coast of North America as an ornamental. There are also references to the fluffy seed being used as packing material for goods from China and the seed being inadvertently released in the Ohio River valley.

Species and varieties of the genus Paulownia are still being sold as ornamentals in the United States because of the showy flowers. The highly prized timber of *Paulownia tomentosa* still commands interest. Unfortunately, some of the traits that

facilitate its use as an ornamental, such as profuse flowering (and thus seeding), the ability to tolerate a wide range of site conditions, and its propensity to grow quickly, also make it problematic for invasion into native ecosystems. While this genus and *Paulownia tomentosa* in particular, can easily invade disturbed sites such as roadways, abandoned urban sites, surface-mined lands, it can also invade disturbed areas in forests



Photo courtesy: Pennsylvania Dept. of Conservation and Natural Resources, www.forestryimages.org

very similar to tree-of-heaven, another Asian invasive tree species. While most Paulownia species have the ability to invade, because *Paulownia tomentosa* has been on the continent the longest and has had time to establish in natural settings it is listed as a nonnative invasive plant by the USDA and by many states.

Identification

The species can easily reach 80 feet in height and over 48 inches in diameter. The bark is gray-brown, smooth when young and later turning rough. Leaves are very large, broadly oval to heart-shaped, and are similar to native catalpa, but, unlike catalpa, they originate on opposite sides of a branch. The leaves are noticeably hairy on the lower surfaces. In the spring, there will be a conspicuous amount of upright clusters of showy, pale violet, and sometimes fragrant flowers. The flowers mature into a dry brown capsule (often referred to as pods) with four compartments that contain several thousand tiny winged seeds. The pods

mature in fall, opening to disperse seed but hang onto the tree throughout winter (a key to identification). The wood is pale and very lightweight, and the branches and main stem have a large open pith.

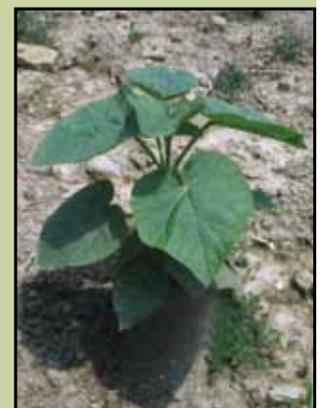
Removal

In most woodlands, *Paulownia tomentosa* occurs scattered or occasionally in small groups. Small Paulownia trees can be pulled from the ground. Lateral roots, if left in the ground, will not send up root suckers as is common with tree-of-heaven or some native species such as black locust. If pulling, make sure all of the root collar is removed as it will sprout prolifically if any part of it is left in the



Paulownia seed pods often remain on the tree and contain hundreds of small seeds. A single tree can produce millions of seeds contributing to its aggressive invasive nature.

Photo courtesy: Jeff Stringer



When hand-pulling small Paulownia seedlings ensure the entire root collar is removed.

Photo courtesy: David J. Moorhead, www.forestryimages.org

ground. The most preferred method of removal is with the use of herbicides. Three techniques are commonly used for individual tree removal including foliar spray for small trees and cut stump and hack and squirt for larger trees. Table 1 shows the herbicides that can be used for control and how and when they can be applied.

Small Trees (less than head high)

Foliar Spray: mid-June to mid-September. Use recommended rates of herbicides that are labeled for killing trees or shrubs using a foliar application (e.g., glyphosate at dilute solutions of 1 to 2% active ingredient, wetting leaf surfaces until runoff). Backpack sprayers with cone nozzles are commonly used for this application.

Large Trees

Cut Stump Treatment: all year except mid-February through April. Cut the tree, and spray any of the listed herbicides at or near full strength or as the label specifies for cut stump treatment. Weaker foliar solutions should not be used. Typically, herbicides are applied with a backpack sprayer or handheld spray bottle. The stumps should be treated when they are fresh (within a couple of hours of cutting). Waiting will reduce herbicide effectiveness for many herbicides. On trees less than 10 inches in diameter, spray the entire stump. On larger trees, treat the outside three inches of the stump. If you cut the tree and do not spray the herbicide when the stump is fresh, you can soak the stump with Garlon 4 (see label instructions for full basal application). There is no credible information indicating that pouring herbicides into the open pith of a stump is effective and is it not recommended.

Hack and Squirt: all year except mid-February to April. All herbicides listed can be used. Use a hatchet to cut slits around the stem through the bark into the wood (see label directions for spacing of slits). Using a handheld spray bottle, spray strong concentrations of herbicide (see label) directly into each slit. You may see on labels a reference to tree injection or the use of a “Hypo-Hatchet.” These techniques are similar to the hack and squirt.

Watch to see that treated trees die over the course of a growing season. Re-apply if necessary the next year. Check your woods for new seedlings, especially after a disturbance occurs, and foliar spray or pull up any newly established seedlings. If you have any questions, contact your local professional forester.



The bark of Paulownia is a gray-brown with irregular shallow fissures. Paulownia with its smooth thin bark can easily be treated with a basal bark application.

Photo courtesy: Chris Evans, River to River CWM4, www.forestryimages.org

Table 1. List of some commonly used herbicides for Paulownia control.¹

Active Ingredient	Common Brands	Treatment	Cautions
glyphosate	Roundup, Accord, and others ²	foliar, cut stump (fresh), hack and squirt	Make sure that you read and follow label directions.
triclopyr – amine	Garlon 3a	foliar, cut stump (fresh), hack and squirt	Mix and apply the chemical in the proper manner and at the recommended times.
triclopyr – ester	Garlon 4	basal bark, cut stump (fresh and dry)	
picloram/2,4-D	Pathway	foliar, cut stump (fresh), hack and squirt	Protect your eyes during mixing and application (where necessary) and check label for personal protective equipment and other precautions.
imazapyr	Arsenal	foliar, cut stump (fresh), hack and squirt	

¹ Other herbicide brands can be used for Paulownia control. The herbicides listed are those that have widespread and traditional use.

² There are currently a large number of brand names for glyphosate herbicides. Many are for use in fields or fencerows. A few such as Accord are labeled for use inside a forest (see Kentucky Woodland Magazine 1(1) for more information on glyphosate herbicides).

Drawing courtesy: USDA PLANTS Database, USDA NRCS PLANTS Database, www.forestryimages.org

About the Author:

Jeff Stringer, Ph.D., is a hardwood extension specialist at the University of Kentucky and is responsible for continuing education and research in hardwood silviculture and forest operations. He is also an editor of the Kentucky Woodlands Magazine.

Cooperative Extension Service, Department of Forestry, University of Kentucky, 201 Thomas Poe Cooper Building, Lexington, KY 40546-0073; Phone: 859.257.5994; Fax: 859.323.1031; E-mail: stringer@uky.edu

www.KyForestHealth.org



Kentucky Tree Farm Committee Newsletter

Why You Should Become a Certified Tree Farmer

by Robert Volk, Chair, Kentucky Tree Farm Committee

Not too long ago, when a potential tree farmer asked, “What’s in it for me? What do I get in return for becoming a tree farmer?,” the usual response was three things: pride, profit, and pleasure. Pride in knowing that your forest is managed in a sustainable manner with the assistance of professional foresters and pride in sharing your knowledge with friends and neighbors. Profit by virtue of your increased visibility in the timber market and access to foresters who can assist you with a timber sale. Pleasure in the total enjoyment of your forest — the clean water, the wildlife, and the outdoor recreational opportunities. That was when the American Tree Farm System® (ATFS) was a “recognition” venue for forestland owners who demonstrate proper forest management with the multiple-use concept.

But today that response goes much further. Recently, the ATFS evolved into the third recognized forest certification scheme in the United States, complete with global recognition of the Program for the En-

dorsement of Forest Certification (PEFC) systems. Now a certified tree farm has access to global timber markets, not just the local mills. A certified tree farm qualifies for membership in carbon credit trading aggregates and can realize profits simply by growing trees. A certified tree farm meets the criteria for consideration in biomass projects that are designed to reduce the country’s dependence on foreign oil.

If you are lucky enough to be a forestland owner, isn’t it time you gave careful consideration to having your forestland certified? Kentucky is truly blessed with an excellent state Division of Forestry that employs most of the qualified inspectors in the commonwealth. Other qualified inspectors include private consulting foresters and those employed by the forest industry. If you’re interested in having your forestland certified, the first step is developing a management plan. Once the plan is established, the next step is adherence to the standards and principles of the American Forest Foundation. These are verified by the qualified inspector. Please visit the Kentucky Tree Farm Web site (www.kytreefarm.org) and take that first step.

Kentucky Tree Farm Committee Goes to Washington!

The 16th National Tree Farmer Convention was held September 2009 in Washington, D.C. and Kentucky had a strong contingency. In addition to attending the educational sessions Kentucky Tree Farm Committee members met with Kentucky Congressman John Yarmuth (back row, 2nd from left) to discuss Tree Farm issues and legislation on behalf of Kentucky Tree Farmers. They also met with Ben Chandler and Geoff Davis and had visits to McConnell and Bunning’s offices.



Kentucky Tree Farm Committee Announces Awards Finalists

The Kentucky Tree Farm Committee is pleased to announce the finalists for the 2009 Tree Farmer of the Year and Logger of the Year contest conducted annually. The winners will be announced in March at the 2010 Kentucky Forest Industries Association Annual Meeting in Bowling Green. The finalists include the following:

Tree Farmer of the Year Finalists:

- Frank Hicks — Greenup County
- Felix Taylor — Jackson County
- The Abbey of Gethsemani — Nelson County

Logger of the Year Finalists:

- Iamur Wright — Carroll County
- Eddie Butler — Lewis County
- Ryan Drake — Muhlenberg County





Kentucky Division of Forestry Director Receives 2009 National Association of State Foresters Sustained Excellence Award

by Lynn Brammer, Kentucky Division of Forestry

Leah MacSwords, the director of the Kentucky Division of Forestry, recently received the Sustained Excellence Award at the 86th Annual National Association of State Foresters. The award was presented by Bob Simpson of the American Forest Foundation. This annual award honors state foresters who have been strong advocates and supporters for the American Tree Farm System®.

“I am honored to receive this recognition from the American Tree Farm System, and I’m very proud of the work we do in Kentucky to support our tree farmers,” MacSwords said. MacSwords’ commitment to sustaining the Tree Farm program provides the foundation for a sustained forest for present and future generations of forest landowners and their families. MacSwords has served as the director of the Kentucky Division of Forestry for the past eight years. Throughout her tenure, she has been a strong and adamant supporter of the Ken-



tucky Tree Farm program, maintaining support for the program through her division that handles more than 95 percent of the state’s Tree Farm reinspections.

MacSwords is deeply involved with Tree Farm committee leadership and participates in its meetings on a regular basis. Simpson said, “Without Leah, her leadership and her commitment to the Tree Farm program, we wouldn’t be the largest and one of the most valued landowner groups in the country.”

The Tree Farm program is part of the daily functions of the state Division of Forestry, due to MacSwords’ leadership of, and belief in, the program.

MacSwords is past head of the Southern State Foresters group and past president of the National Association of State Foresters where she continues to promote the Tree Farm program to her colleagues throughout the United States.

Kentucky Tree Farm News Bulletin

by Pam Snyder, Kentucky Division of Forestry & Co-Chair Kentucky Tree Farm Committee

Come one, come all...Kentucky woodland owners! There is exciting national news to share about the American Tree Farm System® (ATFS) and the U.S. Forest Service. The two programs have recently signed a memorandum of understanding that formally recognizes each program’s forest management plan types (Tree Farm Plan and Forest Stewardship Plan). This is extremely significant. It allows for both programs to be more effective and to better coordinate forest management efforts for Kentucky landowners who are enrolled as a “certified” Tree Farmer or “recognized” as part of the Kentucky Forest Stewardship program.

The Kentucky Tree Farm Committee (KTFC) is sponsored by the Kentucky Forest Industries Association, and this committee oversees the Kentucky Tree Farm (KTF) program in the state. The committee is made up of a host of volunteers (industry, consultant, and state agency foresters; landowners; education specialists; and Cooperative Extension personnel). The Kentucky Division of Forestry administers the Kentucky Forest Stewardship Program and typically writes approximately 1,000 forest stewardship plans annually. The division has been a longtime partner of the KTFC and the KTF program.

The KTFC has been accepting forest stewardship plans over the past decade along with Tree Farm plans and continues to have a model program that is constantly looking for benefits for Kentucky woodland owners. It takes the coordination and effort of the Kentucky’s Tree Farm volunteers and dedicated woodland owners to make the program successful. This announcement raises the profile of the ATFS on a national level and will enhance the benefits to current and future Tree Farmers!

About Us!

The Kentucky Tree Farm Committee is the state affiliate of the ATFS, which is a national program that promotes the sustainable management of forests through education and outreach to private forest landowners. Founded in 1941, ATFS has 24 million certified acres of privately owned forestland and 91,000 family forest landowners who are committed to excellence in forest stewardship. In Kentucky there are nearly 800 Tree Farmers representing more than 200,000 acres. You can learn more about the Tree Farm program in Kentucky by visiting www.kytreefarm.org or calling 502.695.3979.



The ice storm that hit Kentucky in January 2009 was, according to some observers, the worst natural disaster in state history. The storm caused extensive damage to woodlands throughout the commonwealth. As a result, many woodland owners may be able to claim a casualty loss deduction from their federal income taxes due to damaged timber. Whether or not doing so is in the financial interest of a woodland owner depends on his or her individual circumstances.

This article highlights some of the basic issues involved in claiming a timber casualty loss that are useful in making such a decision. A consulting forester can normally help in quantifying the value of the destroyed or damaged timber and in other issues.

timber damaged, or

- the adjusted capital basis of the timber, i.e., the value of the timber when ownership was taken.

In practice, this requires the documentation of the damaged or destroyed timber, determination of the fair market value of the timber just before and after the casualty, and the pre-casualty adjusted basis in the timber.

Determining Timber Basis

For most timber owners, the key issue is determining the adjusted basis of their timber. Basis is a tax concept to determine the “cost” of owning a capital asset such as timber. Separate accounts for basis are usually kept for

Determining Timber Casualty Loss

by Andrew Stainback

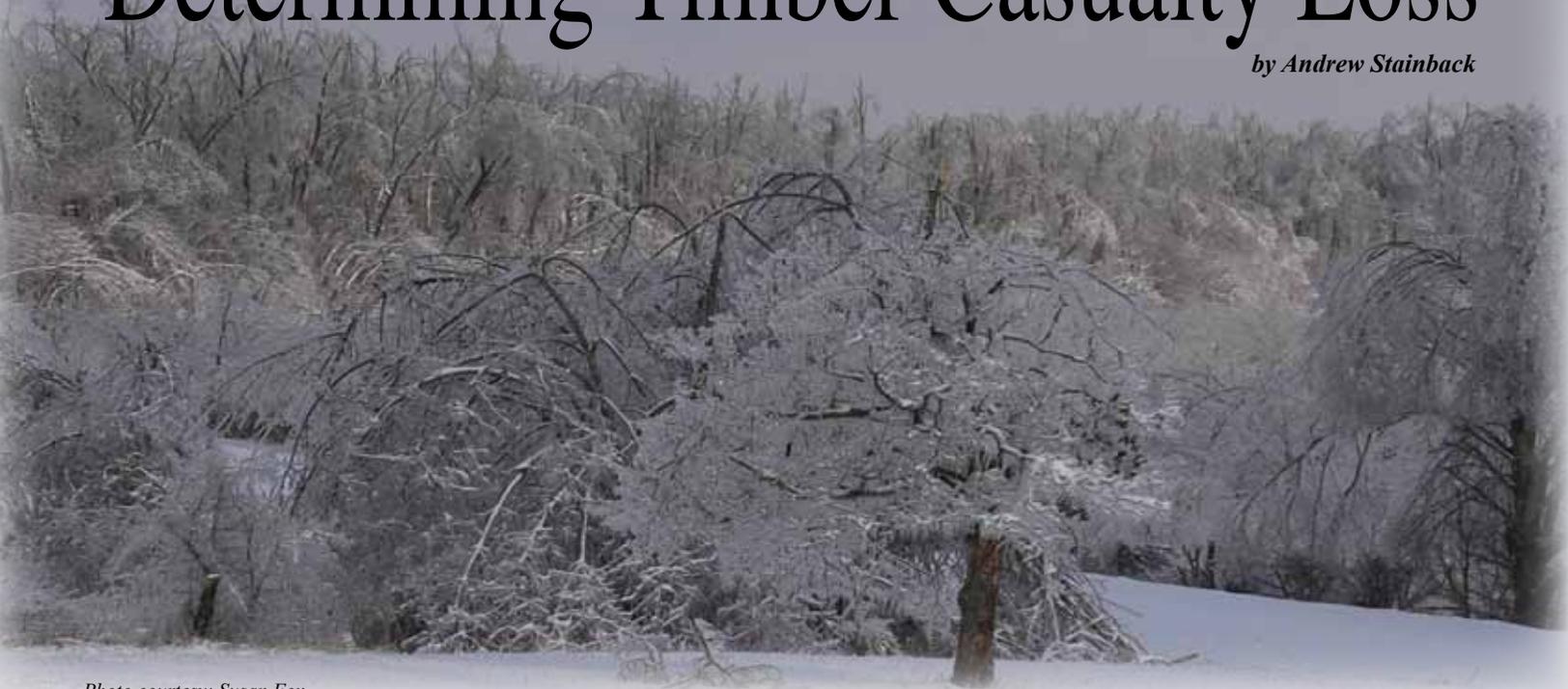


Photo courtesy: Susan Fox

Timber Casualty Loss

The Internal Revenue Service (IRS) allows two types of timber loss deductions—casualty and non-casualty. A casualty loss occurs when timber is damaged or destroyed from “any sudden, unexpected, and unusual event.” Such events include ice storms, fire, hurricanes, tornadoes, floods, earthquakes, high winds, and certain human-caused events such as train derailments. Other types of losses such as timber theft, condemnation, or losses due to events that are unusual and unexpected but not sudden (i.e., insect outbreaks or droughts) may be deducted as a non-casualty loss under other tax provisions.

Current federal tax law allows a timber owner to deduct the lesser of two values:

- the fair market value loss, i.e., the market value of the

timber, land, and other capital assets (i.e., barn, bridges, etc.). Most knowledgeable landowners who sell timber are familiar with the concept of timber basis because it is used to calculate the net profits of a sale for tax purposes. Original basis is the value of the timber when the timber was acquired through purchase, inheritance, or gift. The original timber basis includes the fair market value of the timber, including pre-merchantable timber and any costs associated with acquiring the timber such as surveying or legal fees. The original basis adjusted for timber removals or additions is termed the adjusted basis. However, the basis is not adjusted for timber growth. Basis is usually determined at the time the timber is acquired and adjusted over time for removals or additions through purchase or plantings. However, it is possible to determine the basis in

timber retroactively using information on timber growth and timber prices at the time of acquisition. This will usually require the assistance of a consulting forester.

Determining the Allowable Deduction

The allowed deduction is the lesser of the adjusted basis for the timber or the reduction in the fair market value of the timber due to the casualty. If the timber is owned as personal property instead of investment or business property, an additional \$100 is subtracted from the deduction, and the deduction is limited to 10% of adjusted gross income. If a salvage sell is conducted and the salvage value exceeds the adjusted basis, the gain is taxable, and no deduction is allowed. Costs incurred in filing for the casualty loss or determining the amount of the loss are not deductible.

It is important to gather pertinent information about the nature of the casualty such as time of occurrence and impacted area. Photographs of the timber damage or loss can also be useful. Any available documents such as forest management records, ownership deeds, insurance claims, or paperwork related to appraisal or forest consulting should be gathered and made easily accessible. Such documents do not need to be submitted when taxes are filed but can be essential in case of an audit. A casualty loss is generally claimed in the year that the casualty occurs. However, in a presidentially declared disaster area, a casualty loss can be claimed on the previous year's taxes (this applies to the January 2009 ice storm in Kentucky).

Filing for a Timber Casualty Loss Deduction

A timber casualty should first be reported on IRS form 4684 for casualty and loss. If the loss or destroyed timber is owned as an investment or personal use, the casualty should also be reported on IRS form 1040 schedule A. If owned as a business, it should be reported on IRS form 4797 instead of form 1040. Finally, the IRS form T should be prepared. If you do not sell timber frequently, this form usually does not need to be filed. Consult the IRS instructions for filing form T to determine if filing is necessary.

Conclusion

Whether or not deducting a casualty loss is in the financial interest of an individual woodland owner depends on his or her individual tax circumstances and the nature and extent of the casualty loss. The cost of filing for a casualty deduction, such as the cost of hiring a professional forester or obtaining appraisals, along with the expected tax savings, are important to consider before making a decision to file.

References and Suggested Reading:

Gaddis, D. A., and Dicke, S. G. (2005). Frequently Asked Questions about Timber Casualty Losses. Available at: www.sref.info/publications/online_pubs/publications/timberlossquestions

Internal Revenue Service. (2009). Topic 515 - Casualty, Disaster, and Theft Losses. Available at: www.irs.gov/taxtopics/tc515.html

Internal Revenue Service. (2009). Timber Casualty Loss Audit Techniques Guide. Available at: www.qai.irs.gov/businesses/corporations/article/0..id=148133.00.html

Martin, J. (1994). Determine Your Basis and Keep More Timber Income. Available at: <http://forest.wisc.edu/extension/Publications/71.pdf>

Stringer, J. (2009). Evaluating Ice Damage. Kentucky Woodlands Magazine 4(1):6-7. Available at: www.ca.uky.edu/KYWoodlandsmagazine/Vol_4_No_1/Evaluating%20Ice%20Damage%20pg%206-7.pdf

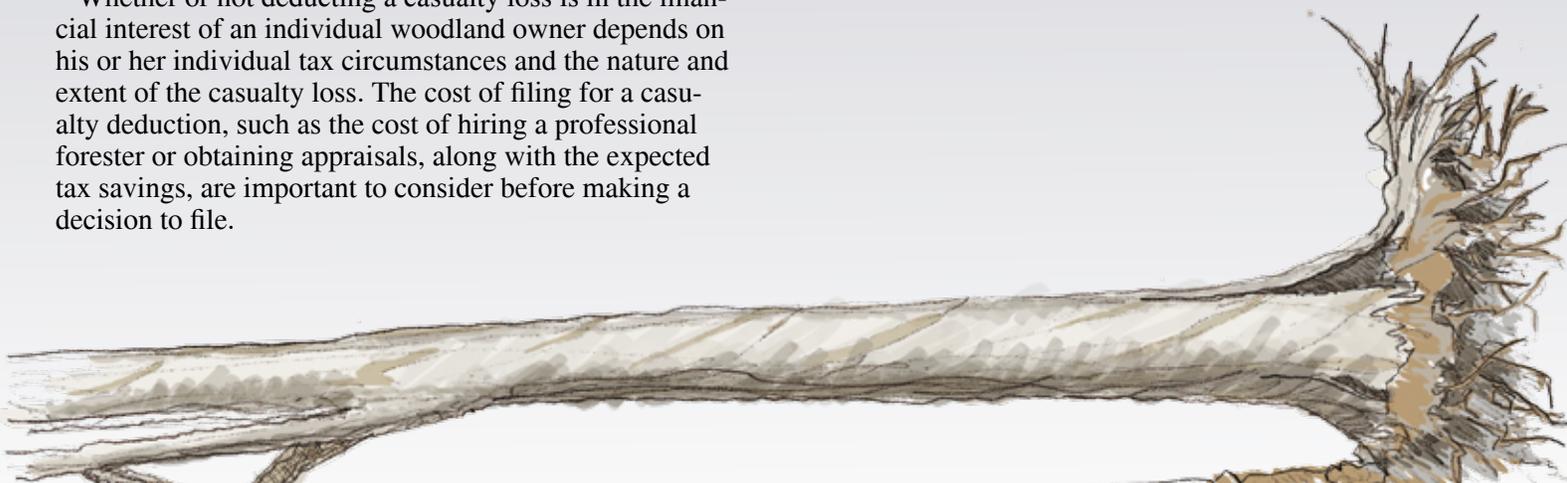
Wang, L. (2008). Income Tax Deduction for Timber Casualty Loss. Available at: www.timbertax.org/publications/Timber%20Casualty%20Loss%20Tax%20Deduction.pdf

Wang, L., and Greene, J. L. (2009). Tax Tips for Forest Landowners for the 2009 Tax Year. Available at: www.timbertax.org/developments/TaxTip09-Final.pdf

About the Author:

Andrew Stainback, Ph.D., is an assistant forestry policy professor at the University of Kentucky Department of Forestry. His interests include: policy and economics of ecosystem services (such as carbon sequestration and biodiversity), environmental, land use, and international law, as well as sustainable development.

University of Kentucky, Department of Forestry: 202 T.P. Cooper Building, Lexington, KY 40546-0073, Phone: 859.257.1770; Fax: 859.323.1031; E-mail: gdrewt02@uky.edu



FORESTRY 101

Woodland Terms

by Doug McLaren

Forestry is a specialized field of study and has its own vocabulary. As you become involved with the development and management of your woodland, you will often hear or read terms or phrases that might be unfamiliar. Understanding these terms and phrases will aid in talking with a forester, understanding technical forestry publications, and provide a deeper understanding and appreciation of your woodlands. Look for and understand the bold terms below to improve your forestry knowledge.

Foresters and Forestry Agencies

If you own woodlands, you need a professional forester. **Professional foresters** are graduates of accredited forestry programs who maintain and enhance their training through continuing education. Professional foresters can assist woodland owners in all aspects of the management of their woodlands. In Kentucky, professional foresters work for a wide variety of organizations, and each can provide a wide range of forestry assistance.

The **Kentucky Division of Forestry (KDF)** is the state agency that offers technical assistance to woodland owners, fights forest fires, grows and sells seedlings, inspects logging operations, works with urban forests, and focuses on forest health and a host of other issues associated with forestry. **Service foresters** are KDF foresters who assist woodland owners with developing management plans and prescribing treatments to improve woods and establish plantings. In most cases, there is no or little cost for the services of these service foresters. However, KDF service foresters cannot advise woodland owners on the value of their woodlands or become directly involved in selling timber. **Consulting foresters** are private professional foresters who work for you. While consulting foresters can perform many of the services of KDF's service foresters, their expertise is generally on the financial aspect of forestry. The fees charged by a consulting forester are based on the time and services provided and are contracted ahead of time. A consulting forester works on your behalf

and will provide the woodland owner with the best possible representation concerning timber sales. One place to find consulting foresters in Kentucky is through the Kentucky Association of Consulting Foresters (www.kacf.org).

The University of Kentucky, through the **Cooperative Extension Service**, employs foresters whose responsibilities are to provide educational opportunities such as workshops and educational materials. The goal of the Extension forester is to provide you the latest information resulting from applied forestry research.

Some forest product companies also employ **industrial foresters** who can assist woodland owners. These foresters are working for the companies they represent and will make decisions concerning your management goals based on the limitations of their employer.

The **U.S. Forest Service** is a very well recognized member of the professional forestry agencies that employs foresters to work on federal public lands such as the Daniel Boone National Forest and Land Between the Lakes.

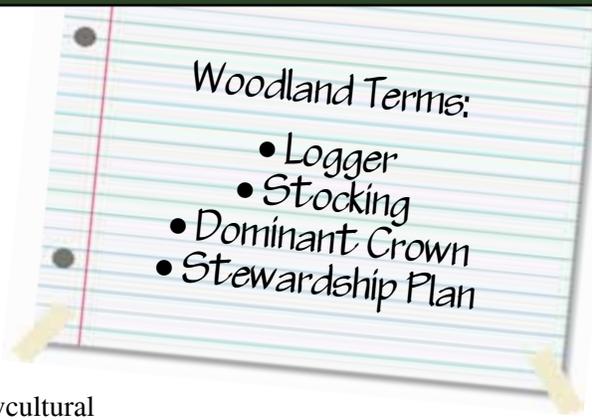
A **logger** is an individual who is highly trained in the harvesting of your timber; most are not professional foresters. Loggers can be recommended by foresters after a plan has been established and the need for harvesting or improvement work has been recommended. Another location to find loggers is through the Kentucky Master Logger program (www.masterlogger.com).



Selecting the right logger for a timber harvesting operation is an important step that should not be taken lightly. Visit www.masterlogger.org or www.ca.uky.edu/cmfp to find a logger near you. Ask for references and avoid selecting a logger placed on the Bad Actor list by checking www.masterlogger.org/master.

Photo courtesy: Kentucky Division of Forestry

When a woodland owner requests assistance in developing a forest **Stewardship Plan**, a written plan to evaluate the potential management in their woodlands for wood production, fish and wildlife habitat, watershed improvement, or recreation and aesthetic enhancement, the forester will most frequently be from the KDF.



Management and Silviculture Terms

Silviculture is the practice of growing and culturing or improving forest trees. Practices such as planting trees, marking **timber stand improvement (TSI)**, or marking harvests to improve or regenerate the woods are all silvicultural practices. **Basal area** describes the amount of surface area taken up by a tree on a per acre basis. If you were to measure the cross-sectional area of a tree (the surface area of the main stem) 14 inches in diameter at 4½ feet above the ground (termed **DBH for diameter at breast height**), you would have approximately one square foot of basal area. The sum total of the trees' cross-sectional measurements on an acre determines **stocking** based on basal area. A well-stocked stand will have approximately 80 to 120 square feet of basal area per acre. **Understocked stands** would have basal areas lower than this standard. **Overstocked stands** will have higher values. All management decisions are based on these stocking determinations. **Site index** is a relative measurement of the woodland's site quality which can then be translated into future wood production. The tree's total height is measured but only on those trees that are in a specific crown class. In the case of a site index, foresters use the **dominant crown class**. Trees in the dominant crown class are those that receive sunlight from all sides. **Co-dominant crowns** of trees receive light only from the tops. **Intermediate crowns** receive very little direct sunlight. **Suppressed or overtopped crowns** receive no direct sunlight. Tree crown classes are heavily evaluated when discussing trees that are removed or retained in future management work.



"Diameter at Breast Height" (DBH) refers to the measurement of tree diameter at a height of 4.5 ft above the ground. DBH provides a standard place to measure diameter which is important because trees are often tapered.

Photo courtesy: John Lhotka

Many landowners are curious about how specific stands of timber have developed in their woodlands. Foresters have

two rather broad methods to define the development of timber stands. **Even-age** stands are those where the age difference of the trees is less than 20 percent of the total age of the stand. Sometimes these stands are the result of a harvest that removed all the trees at one time. **Uneven-age** stands are common in Kentucky's woodlands, and they contain various ages and sizes of trees. Uneven-age stands occur when individual mature stems are removed from time to time. Other stems in the forest are evaluated also during a stand evaluation. **Advance regeneration** are small trees or seedlings that are small but capable of becoming the "next generation" when the mature trees are harvested. **Snags** are trees that are dead or dying and have few limbs, if any. These stems provide homes and feeding sites for a multitude of wildlife species.

While it may seem there are many forestry terms to learn, most are fairly straightforward. Understanding these terms will help you to get the most from your woodland ownership experience. Be sure to check out the next installment of Forestry 101 when we will cover timber harvesting and wood products.



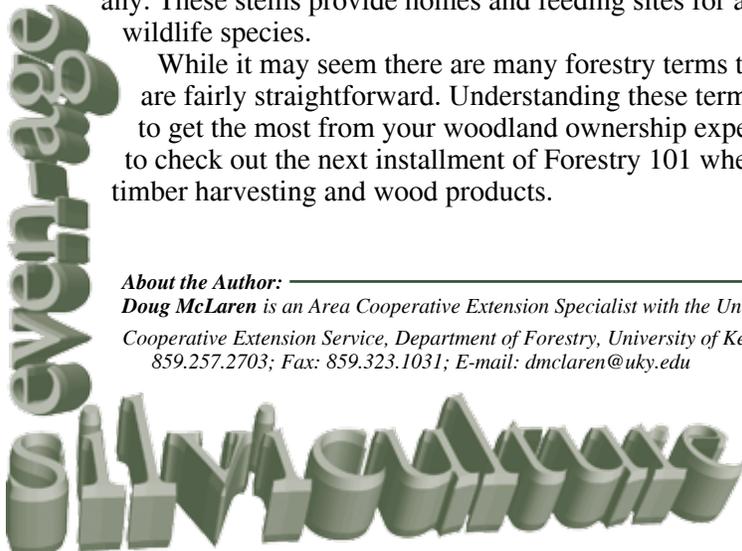
Photo courtesy: Jeff Stringer

"Advance Regeneration" refers to tree seedlings and saplings that are developed enough to occupy the site if the overstory trees are removed. When managing for oak species it is important to have adequate advance oak regeneration to increase the probability that oaks will occupy the site following a harvest—failure to do so can result in a change in species composition.

About the Author:

Doug McLaren is an Area Cooperative Extension Specialist with the University of Kentucky Department of Forestry.

Cooperative Extension Service, Department of Forestry, University of Kentucky, 107 Thomas Poe Cooper Building, Lexington, KY 40546-0073; Phone: 859.257.2703; Fax: 859.323.1031; E-mail: dmclaren@uky.edu



Where, oh where, is dear little Nellie? Way down yonder in the pawpaw patch.”

This traditional American folk song was quite popular once, and fall hunting for pawpaws in the woods is still a cherished tradition for many families in Kentucky. In 1784, John Filson, an early settler of Kentucky, wrote that “the pappo-tree does not grow to a great size, is a soft wood, bears a fine fruit much like a cucumber in shape and size, and tastes sweet.” In 1806, Lewis and Clark recorded in their journal how pawpaws helped save them from starvation. Daniel Boone and Mark Twain were pawpaw fans.

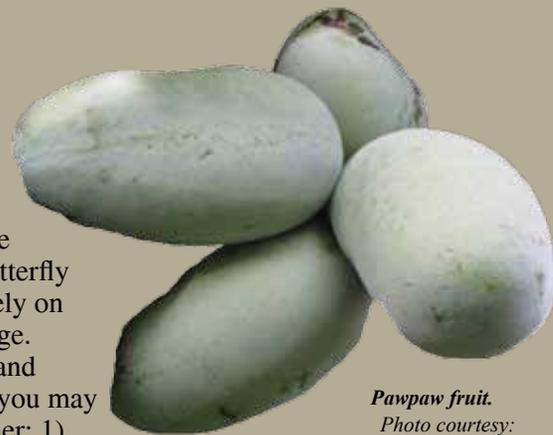
Recently, interest in pawpaws has grown significantly. In 1990, Kentucky State University (KSU) began a research program with the aim of developing pawpaws as a new tree-fruit crop for Kentucky. With a unique mango, banana, and pineapple flavor, and a tropical-like aroma, pawpaw fruit has fresh market appeal for farmers’ markets and direct sales to restaurants, as well as processing potential for the orange-yellow pulp for use in gourmet items such as ice cream, wine, and pies.

tion for animals, erosion control, and enhancing insect biodiversity. The zebra swallowtail butterfly larvae feed exclusively on young pawpaw foliage.

If you are a woodland owner in Kentucky, you may want to consider either: 1) planting pawpaw seedlings to assist in erosion control, attract wildlife, and diversify your current woodlands area, or 2) planting grafted pawpaw varieties in an orchard adjoining your current woodland area or timber planting.

Site Selection

For a woodland planting site, pawpaws will thrive in areas with well-drained soils that are often moist, especially near streams, but that are not frequently waterlogged. Pawpaw orchards should be planted in well-drained soils and areas



Pawpaw fruit.
Photo courtesy:
Kirk Pomper

Non-Timber Forest Products

Forest Production of Pawpaws

by Kirk Pomper



Pawpaws prefer moist habitats and often grow in patches near coves and streams. Photo courtesy: Kirk Pomper

Pawpaws are found throughout Kentucky’s forests as a native understory tree, often along streams and rivers. Pawpaw trees produce root suckers and can form large patches of over 500 stems. Patches serve an important role in ecosystems around streams and rivers and for fruit produc-

east of woodlands or timber plantings that will serve as windbreaks for the orchard. Pawpaws will grow in shaded areas; however, fruit production will be greatest in areas of full sun. Fruit set can be low in native patches due to shading, lack of pollinators (flies), and failure of cross pollination (which requires at least two genetically different pawpaw trees). Low areas in valleys have poor air drainage, and pooling of cold air can lead to spring frost damage to pawpaw flowers in April and May that can cause crop failure.

Plant Material and Planting Time

Use pawpaw seedlings in woodland areas where they can spread by root suckering. Remember that the seedlings are not identical to their parents, and fruit quality cannot be guaranteed. Fruit may be of high or poor quality. Seedlings must undergo a period of juvenility and will flower four to eight years after planting. Pawpaw seed can be removed



The flower of Pawpaw is unusual in that it is pollinated by flies.

Photo courtesy: Jeremy Lowe

from fruit, washed in a dilute bleach solution (5%), and be stored in zipper-top bags with moist peat moss. Bags should be kept in the refrigerator for at least three months (stratification), or until planting, to satisfy the seed chilling requirement. Never let pawpaw seed dry out or freeze; this will kill the seed. If sowing into containers, use a peat-based potting soil and tall pots to accommodate the strong taproot. Root suckers in native patches usually have poorly developed root systems and can rarely be transplanted successfully. In orchards, space trees eight feet apart within rows and 18 feet between rows; woodland-planted trees should be no farther than 100 feet apart.

For fruit production in orchards that adjoin woodland areas, purchase named pawpaw varieties that have been grafted or budded onto seedling rootstock. Grafted or budded trees produce high-quality fruit three to five years after planting. The pawpaw varieties Sunflower, Overleese, NC-1, Shenandoah, Wabash, and KSU8-2 are recommended for planting based on Kentucky trials. Root suckers from grafted trees will not be true to the variety and should be removed. Spring planting (April-May) has been more successful in Kentucky than fall planting.

The Kentucky Division of Forestry is selling seedlings to the public that have been grown from high-quality KSU pawpaw seed. For more information, go to www.forestry.ky.gov/seedling.

Early Care and Establishment

Newly planted pawpaw trees do not compete well with grass, weeds, or other plants. Place straw or woodchip mulch at six to eight inches in depth extending out at least three feet from the trunk to control weeds and retain moisture. Water and fertilize the trees, especially during the first two years of establishment.



The "Wabash" pawpaw is one of several improved varieties recommended for planting based on Kentucky trials.

Photo courtesy Jeremy Lowe

Harvest

Depending on the variety, fruits ripen in late August to early October. Fruits ripen on the same tree over about a two-week period, which reflects the extended spring flowering period. Pawpaw fruit are ripe when they begin to soften and can be gently pulled off a tree in a manner similar to ripe peaches. Fruit have a five- to seven-day shelf life at room temperature; however, fruit can be stored under refrigeration for up to three weeks to maintain a good eating quality.

Economics

In 2009, pawpaw fruit usually sold for \$1 each (about \$2 per pound) at farmers' markets and up to \$3 per pound at specialty groceries in Kentucky. Grafted varieties will come into full production by the sixth year after planting and produce 50 to 75 pounds of fruit per tree each year. Seedling trees usually have lower yields, and fruit quality can be low (e.g., small fruit, bitter aftertaste).

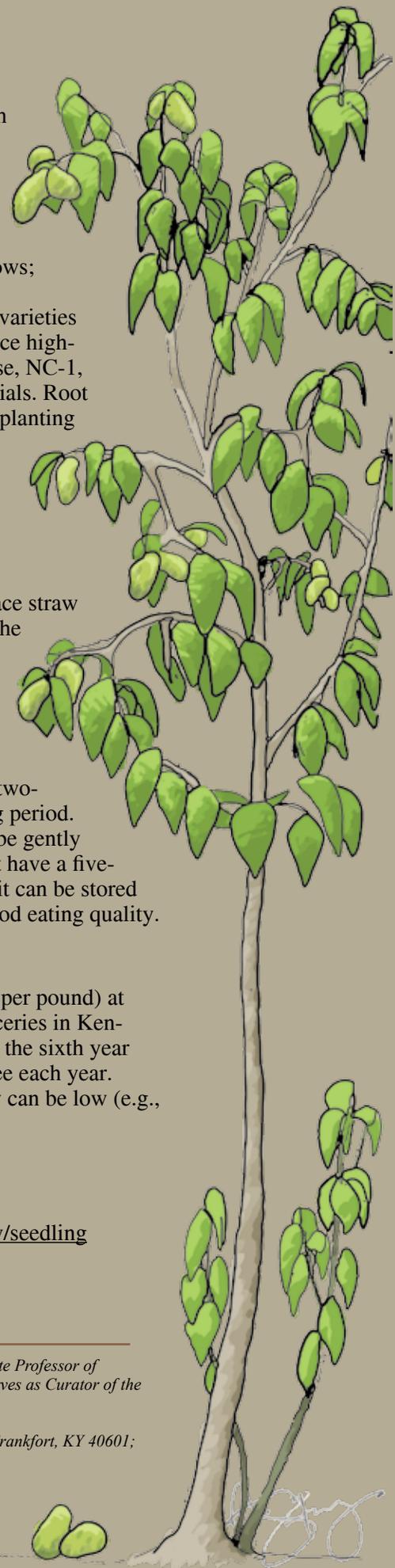
Web Site References

- The Kentucky State University Pawpaw Web site: www.pawpaw.kysu.edu
- The Kentucky Division of Forestry pawpaw seedling order form: www.forestry.ky.gov/seedling
- The KSU Pawpaw Nurseries List: www.pawpaw.kysu.edu/pawpaw/nurslst.htm

About the Author:

Kirk Pomper, Ph.D., is the Principal Investigator of Horticulture at Kentucky State University and is an Adjunct Associate Professor of Horticulture at the University of Kentucky. He conducts research with pawpaws, blackberries, and nut crops and also serves as Curator of the USDA National Clonal Germplasm Repository for Pawpaw located at KSU.

Dr. Pomper can be reached at Kentucky State University, Community Research Service, 129 Atwood Research Facility, Frankfort, KY 40601; Phone: 502.597.5942, Fax: 502.597.6381; E-mail: kirk.pomper@kysu.edu



Test Your Knowledge

Editor's note: The "Test Your Knowledge" section has been updated to be interactive with the current issue of the magazine. Questions are drawn from the articles in this issue; if you have trouble with any of the answers then please review the articles to discover them. Please let us know if you like the new format—use the reader response card, e-mail forestry.extension@uky.edu, or call 859.257.7597 and give us your feedback!



Hint: See article on page 16.

1. Stocking is a term used to explain how much of an acre of woodlands is being occupied by trees. To determine stocking the trees have to be sampled and measured at DBH to determine their diameter. At what height above the ground is DBH measured?

- A. 2.5 feet
- B. 3.5 feet
- C. 4.5 feet

2. Sugarberry and hackberry share similar growth characteristics and are even from the same Elm family. However, one is better adapted to tolerate dry and droughty conditions; which one does "best" on those types of sites?

- A. Sugarberry
- B. Hackberry



Hint: See article on page 21.

3. I now know that Paulownia is an invasive species that can pose a threat to my woodlands. Generally, what is the best way to control Paulownia on my property?

- A. Use appropriate herbicides.
- B. Mow them down every other year to weaken their root systems.
- C. Remove overstory trees because Paulownia does not like too much sun.



Hint: See article on page 10.

4. I want to harvest some timber from my woodlands but I do not want to have harvest that degrades my woodlands. What should I do?

- A. Ask the logger to only take trees that are larger than 14 inches in diameter so that the smaller trees will have room to grow.
- B. Harvest only the hard mast trees such as oaks, walnuts, beech, and hickories leaving the soft mast trees to support wildlife and seed into the harvest areas.
- C. Have a forester mark a harvest that includes improvement of the woods and maintenance of proper regeneration.



Hint: See article on page 1.

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

5. I understand some of the benefits of forest certification such as participating in carbon credit markets but I am not sure how else forest certification will benefit me. Which of the following is NOT a benefit of forest certification?

- A. Higher level of technical assistance than typical woodlands receive.
- B. More potential market access for my timber.
- C. None of the above.



Hint: See articles on page 12 and 23.



Hint: See article on page 18.

6. There appears to be a growing market for pawpaw fruit at local farmers markets (\$2/lb.) and some specialty grocery stores (\$3/lb.). If I decide to plant grafted varieties when will they come into full production and how many pounds of fruit per tree will they produce each year?

- A. 3rd year—25 to 50 pounds of fruit per tree
- B. 6th year—50 to 75 pounds of fruit per tree
- C. 9th year—75 to 100 pounds of fruit per tree

Kentucky Champion Tree Program



Photo courtesy: Diana Olszowy

Sugarberry - The Other Warty-Barked Tree

by Diana Olszowy

Even though sugarberry is native to Kentucky, it is not a frequently recognized tree. This may be due to the fact that it is often mistaken for its cousin the common hackberry, which it closely resembles. Both the sugarberry and the hackberry have gray bark with numerous warty ridges, though the sugarberry usually displays much less of this characteristic. Both produce an abundant supply of fleshy, dark red to black berries which attract birds and squirrels and, unfortunately, many insects. Mealy bugs and aphids covet the juice from the berries and produce a sticky, sugary excretion called “honeydew,” which can harm your car’s finish.

Hackberry is located in all 50 states, and the sugarberry is more commonly found in the central to southern regions of the United States from Virginia to Florida and from Texas to central Illinois. In the southern states, sugarberry is commonly referred to as “sugar hackberry” and, since sugarberry lacks the winter-hardiness of hackberry, it is also referred to as southern hackberry. Both hackberry and sugarberry thrive in a variety of sites, but the sugarberry adapts well to dry and droughty conditions. Its ability to tolerate salt makes it an excellent street and park tree for use in urban areas. Since both are part of the elm family, their wood is



The bark of sugarberry (left) and hackberry (right) are similar but the sugarberry has many fewer warty ridges than hackberry.

Photos courtesy: Sugarberry - Stephen J. Baskauf, <http://bioimages.vanderbilt.edu/> - Hackberry - Joseph O'Brien, USDA Forest Service, Bugwood.org

marketed as such, and the uses include plywood, athletic equipment, and some furniture.

Sugarberries average two to three feet in diameter and 60 to 80 feet in height. Their crown is usually as wide as they are tall. Our state champion sugarberry is no exception.

The Fayette County champ is 70 feet tall and has a crown spread of 70 feet, but its diameter is nearly seven times larger than the average sugarberry. Our champ has a circumference of just over 166 inches—that’s nearly 14 feet around! This enormous tree grows beside a major roadway in Fayette County, but it does not stand out due to the large quantity of other enormous specimens of oak, ash, and maple that grow along the same roadway. Drive slowly and look for the sugarberry because it is an admirable species that deserves a second look.

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.

Kentucky Division of Forestry, 627 Comanche Trail, Frankfort, KY 40601; Phone: 502.564.4496; Fax: 502.564.6553; E-mail: diana.olszowy@ky.gov

Photo courtesy: Stephen J. Baskauf, <http://bioimages.vanderbilt.edu/>



The leaves of sugarberry are 2 to 5 inches long and 1 to 2 inches wide and gradually taper to a point that is often curved.



Forest Certification

by Jeff Stringer

Editor's Note: The magazine will begin to feature information on woodland and wood certification. Certification is one of the most important and growing concepts in forestry throughout the United States and the world. Woodland owners undoubtedly will benefit by understanding certification and the advantages and costs associated with certifying woodlands.

Forest Certification: What? Why? How?

What is forest certification? Why should I care? How does it work? These are questions commonly asked by woodland owners. The following provides a quick and direct answer to these questions.

What Is Forest Certification?

A certified forest describes a forest (or woodlands) that is managed under a set of standards developed by an organization. Further, the woodlands are inspected periodically to ensure that they are being managed according to the standards. Certified wood refers to wood products (logs, lumber, flooring, furniture, etc.) that were derived from trees growing in a certified forest.

Why Certify a Forest?

Woodland owners certify their woodlands for several reasons. To sell carbon, your woodlands must be certified. Some markets for wood products require that the wood come from trees grown in certified forests. In some states, woodland owners pay less property tax if their woodlands are certified. Certification provides woodland owners with a higher level of technical assistance than typical woodlands are afforded.

How Is a Forest Certified?

Governmental bodies do not have a certification system. Instead, certification systems have been developed by various forestry organizations. Woodland owners can get their woodlands certified under several different systems developed by

estry Initiative (SFI), Forest Stewardship Council (FSC), and others. Each of these organizations has its own standards for certification. Some elements of all standards are very similar, and some standards have specific and unique stipulations. Certification systems range from those that are relatively simple to understand and implement to those that involve a fairly sophisticated and detailed management plan. The systems reflect the values of the organization that developed them. Also, there is a difference in demand for certified wood that has been grown under the different standards.

Woodland owners apply to an organization (like American Tree Farm), and the woodlands is inspected or audited to determine that they are being managed under the standard. Some certification is basically free, and some certification can cost several hundreds or thousands of dollars.

There is no right or wrong certification organization or system. Most woodland owners become certified under the system that best meets their needs. For example, woodland owners who enter the carbon program must have their woodlands certified, and most choose the American Tree Farm program. Some woodland owners are close to industries that want wood certified by the FSC, and it might be advantageous for them to have their certification through FSC. So the type of certification selected is based on the needs and wishes of the woodland owner.

Future issues of the Kentucky Woodlands Magazine will contain the "Certification Corner" providing more detailed information on certification. Archived editions of "Certification Corner" will be available at www.ukforestry.org, and click on Kentucky Woodlands Magazine.



SUSTAINABLE FORESTRY INITIATIVE

organizations such as American Tree Farm (ATF), National Woodland Owners Association (Green Tag), Sustainable For-

About the Author:

Jeff Stringer, Ph.D., is a hardwood extension specialist at the University of Kentucky and is responsible for continuing education and research in hardwood silviculture and forest operations. He is also an editor of the Kentucky Woodlands Magazine.

Cooperative Extension Service, Department of Forestry, University of Kentucky, 201 Thomas Poe Cooper Building, Lexington, KY 40546-0073; Phone: 859.257.5994; Fax: 859.323.1031; E-mail: stringer@uky.edu

Kentucky Woodland

Using Books to Connect with the Youth in Your Life

Our children seem to spend much more time indoors than we could have ever imagined. Now there is even an act of congress that was legislated, No Child Left Inside to encourage kids to be out of doors and increase their nature literacy. As woodland owners, we need to encourage our younger family members to take advantage of all the learning opportunities that our woodlands can provide.

Below is a list of young children's books that can either be purchased or obtained from your local library. These books will provide a great opportunity to connect with our younger children or grandchildren. It is never too early (or too late) to learn about the importance of Kentucky's woodlands.

- *The Tree Farmer* – Leavell, Chuck, 2005. Grandfather and grandson take a journey through his tree farm and discover the benefits of trees. Grades K-5. ISBN: 1893622169
- *More Trees Please* – Wood, Rich, 2008. What do we get from trees? Do animals use trees? Introduces students to fun facts about trees. Grades PreK-2. ISBN: 1439210616
- *Are Trees Alive* – Miller, Debbie Walker and Company, 2002. Compares similarities between children and trees. Grades PreK-2. ISBN: 0802788017
- *Shelterwood* – Shetterly, Susan Hand, 1999. The child of the story watches her grandfather harvest timber and better understands how a forest can provide

for futures to come. Grades 2-6. ISBN: 0884482561

- *Forestry* – Drake, Jane, 2002. Take an informal tour of harvesting and replanting equipment and the products they provide. Grades 3-5. ISBN: 1553374231
- *Hello Tree* – Ryder, Joanne, 1991. Some of the unique characteristics of trees. Grades PreK-3. ISBN: 0525673105
- *Trees* – Pluckrose, Henry, 1994. Help children better understand environmental issues. Grades K-2. ISBN: 0516401211
- *The Giving Tree* – Silverstein, Shel, 1964 (a classic). A moving parable about the gift of giving and the capacity to love. Grades PreK-2. ISBN: 0060256656
- *A Tree is Nice* – Udry, Janice May, 1956. A simple message as to the importance of a tree. Grades K-K. ISBN: 0064431479
- *How Plants Survive* – Kudlinski, Kathleen, 2003. Here is the best it will get explaining silviculture. Grades 2-6. ISBN: 0791074226
- *Look at This Tree* – Canizares, Susan and Pamela Chanko, 1997. Shows the diversity of trees. Grades PreK-3. ISBN: 0590149989
- *Winter Days in the Big Woods* – Wilder, Laura Ingalls, 1932. How did families prepare for the winter in the "good old days" before TV? Grades K-4. ISBN: 0064433730

2010 Ohio River Valley Woodland & Wildlife Workshop

Join us for this special workshop for landowners in the Tri-State region. Forestry and wildlife experts from Indiana, Kentucky, and Ohio will be on hand to present informational sessions and answer your questions. There will be something for everyone so we hope to see you there.



Saturday, March 27, 2010

8:30 a.m.- 3:00 p.m.

Diamond Oaks Career Development Campus
6375 Harrison Ave., Cincinnati, OH 45247

Register by March 18: \$35; after March 18: \$45.

Last day to register is March 22.

Pre-registration is required at

http://woodlandstewards.osu.edu/classes/index.php?article_id=112 or call 614.688.3421 for more information.

Upcoming Dates To Remember:

Date:	Event:	Location:	Contact:
March 25-26	KFIA Annual Meeting	Bowling Green	502.695.3979
March 27	ORVWWW	Cincinnati, OH	614.688.3421
April 16-17	KWOA Annual Meeting	Barren River Lake State Park	606.876.3423

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

News To Use

UK Forestry Extension Wins National Family Forests Education Award

The University of Kentucky's Department of Forestry Extension has been named winner of the 2009 Family Forests Education Award presented each year by the National Association of University Forest Resources Programs (NAUFRP) and the National Woodland Owners Association. There were nine nominations from across the United States. The 2009 award was announced at the annual meeting of NAUFRP held prior to the Society of American Foresters convention in September 2009. Special recognition was given to the Kentucky Woodlands Magazine. We would like to thank you for the opportunity to serve Kentucky's woodland owners.



UK Forestry Extension
Back row (L-R): Billy Thomas, Bobby Ammerman, Jeff Stringer, Doug McLaren Front row (L-R): Deborah Hill, Terry Conners, Renee' Williams, Carroll Fackler Not pictured: Tom Barnes

Kentucky Woodland Owners Association Identifies Forestry Issues

The Kentucky Woodland Owners Association was asked by the National Woodland Owners Association (NWOA) to rank 10 private forestry issues. The NWOA will then compile the rankings from all 36 state affiliates to develop a national ranking of the following 10 issues:

1. Markets: Timber, Biomass, Carbon & Free Trade
2. Taxes: Fair Income, Inheritance, and Property
3. Stewardship incentives: Cost Sharing and Tax Credits
4. Certification: Forest Practices, Loggers, Foresters
5. Forest Health and Invasive Species
6. Extension Education and Service Forestry
7. Property Rights: Takings and Right-to-Practice Forestry
8. Wildfire: Suppression Limits, Fuels, and Prescribed Fire
9. Landowner Liability
10. Wetlands and Water Quality

Answers to Test Your Knowledge on page 20.

- | | |
|------|------|
| 3. A | 6. B |
| 2. A | 5. C |
| 1. C | 4. C |

UK Forestry Welcomes Andrew Stainback to Department

Andrew Stainback came to the University of Kentucky in July 2009. His duties in the Department of Forestry are to develop a research program that addresses policy issues relevant to the sustainability of forests and other natural resources. He will also teach undergraduate and graduate courses in Forest and Natural Resource Policy.



His research will address how policy and emerging market opportunities impact forest management. One of his areas of focus will be on the emerging market opportunities for forest landowners in Kentucky such as biofuel, certified timber and carbon offsets. In addition he is interested in how to improve incentive programs designed

to encourage environmentally beneficial forest management on private forestland. He has previously worked on the policy and economic feasibility of enhancing ecosystem services (i.e carbon sequestration, water quality improvement and biodiversity habitat) from forests. He has also researched the opportunities associated with agroforestry. Andrew received his Ph.D. in Forest Resources and Conservation from the University of Florida in 2002 and a J.D. from Florida State University in 2006. He earned his B.S. degree in Biochemistry from Virginia Tech and a M.S. Degree in Resource Conservation from the University of Montana. For more information regarding his research program please visit

<http://www.ca.uky.edu/forestry/stainback.php>.



UNIVERSITY OF KENTUCKY
Forestry Extension Office
Department of Forestry
University of Kentucky
216 Thomas Poe Cooper Bldg.
Lexington, KY 40546-0073

PRSR STD
U.S. POSTAGE
PAID
Lexington, KY
PERMIT NO. 51

In This Issue...
Forest Production of Pawpaw
Determining Timber Casualty Loss
Low Cost Hunter and Woodland
Liability Insurance

Online version at
www.ukforestry.org