



# Kentucky Woodlands

Volume 6 Issue 3

Magazine

**Controlled or  
Prescribed  
Burning**

**Wild Pigs**

**Defend Your  
Home from  
Wildfire**

# Kentucky Woodlands

Volume 6 Issue 3 Magazine  
December 2011

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


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## From the Editors of the Kentucky Woodlands Magazine:

Fire is the focus of this issue with five articles providing perspectives and information on the positives and negatives of fire in the woods. This issue contrasts the degradation that can occur from uncontrolled wildfire and how to protect your property and home as well as the positive attributes of using a controlled or prescribed burning to help improve your woods and habitat for wildlife.

Thanks to Bert Pearson, a woodland owner in Oldham County, for providing his perspective on the use of prescribed fire. This issue also resembles an advertisement for a critter ranch with information on wild pigs, river otters, honey bees, and ticks. Our normal departments are also present including Big Trees, the Certification Corner and Kentucky News to Use. If you're a woodland owner we know you will find something you can use or of interest in this issue. Thanks as always for your attention to your woodlands and send us your feedback.

  
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## About the Cover:

Gretchen Sovkoplak, Department of Forestry, University of Kentucky, provided the cover photo. The image shows low flames and heavy smoke characterized by an early spring burn in the Daniel Boone National Forest. This prescription burn, carried out by USDA Forest Service personnel, is part of ongoing ecological research conducted at the University of Kentucky, Department of Forestry investigating the restoration of fire to the landscape as a management tool to promote forest diversity and health, as well as giving Kentucky's most valuable timber species a competitive advantage. For more information please visit:

[www.fs.fed.us/r8/boone/fire/fsa/](http://www.fs.fed.us/r8/boone/fire/fsa/)

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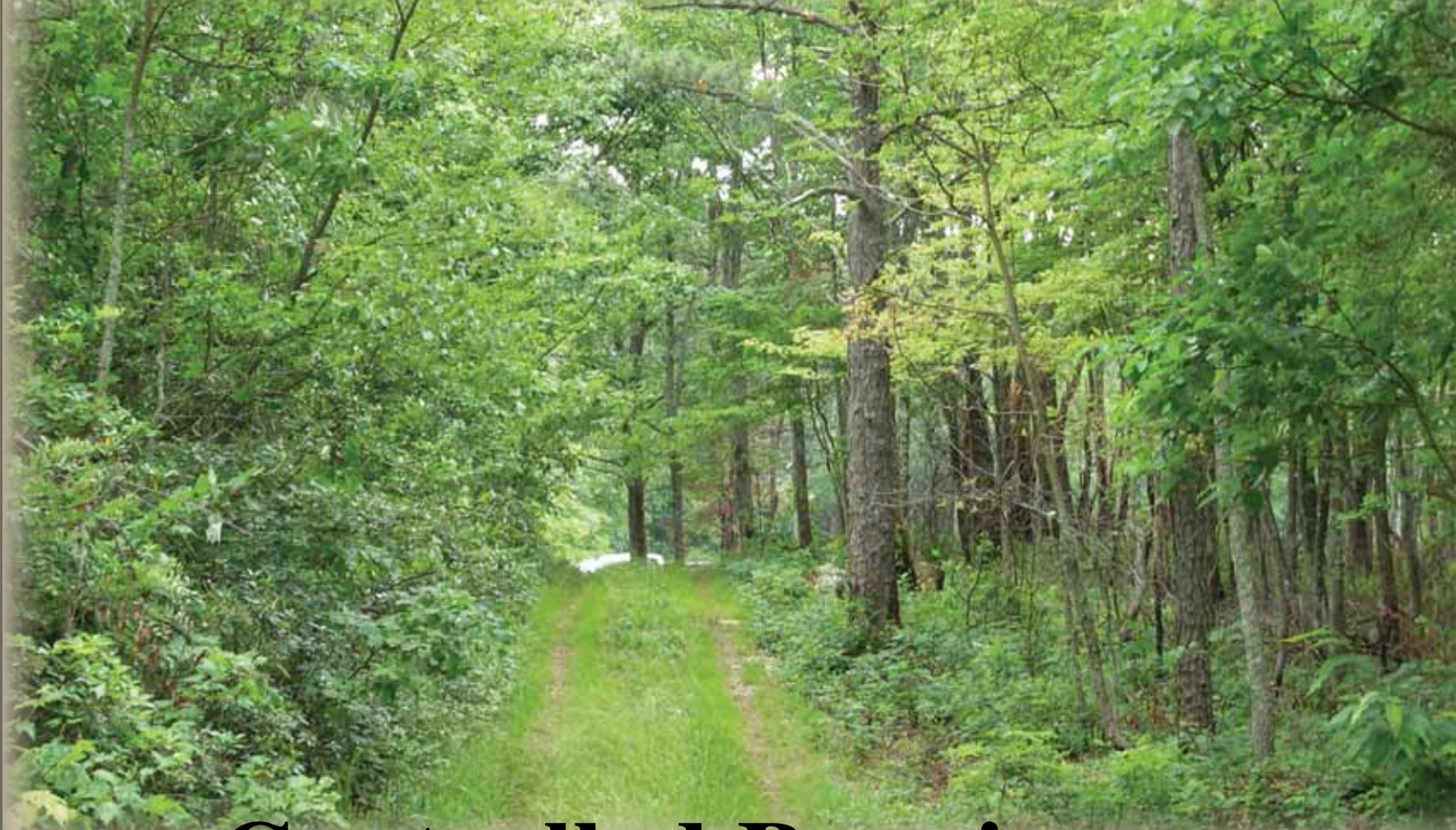
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**Editor's Note:** The use of FSC mixed source paper indicates Kentucky Woodlands Magazine's commitment to sustainable woodland management. We are also pursuing the use of SFI paper produced on SFI certified and American Tree Farm System certified land.



# Controlled Burning as a Habitat Management Tool in Kentucky

by Jeffery Sole

## *Fire History In Kentucky*

Many people are surprised to learn fire played an integral role in the development of nearly every type of ecosystem historically found in Kentucky. Kentucky's native forests, woodlands, savannas, grasslands, and even our wetlands developed with fire routinely being a part of their development and evolution. Most of these fires resulted from fire being purposely set by Native Americans. Some fires also likely occurred through lightning strikes during storm events, although this occurrence would have been rare. Fire is an important process in maintaining habitats for many kinds of plants and animals. Throughout history plants and animals have relied on periodic fires for their reproduction, growth, and survival. The development of towns, roads, and farmlands, combined with effective fire suppression, has stopped fire from moving across the land as it once did. Controlled Burning (a.k.a. Prescribed Fire) is a way to return fire to the landscape in a controlled manner so it may continue its vital ecological role. Controlled burning also reduces heavy buildup of dead wood and other debris, thereby decreasing the threat of catastrophic wildfire.

Over the past 100 years fire suppression has been the norm, leading to considerable changes in the vegetation living in our forest and grassland systems. An "altered fire regime" has been identified as one of the key ecological threats to many of our native habitats across the Kentucky landscape. In general, the density of trees has increased, leading to closed-canopy forests with little understory vegetation and a shift in tree species composition—away from oak-hickory toward maple-beech dominance.

Consequently many natural resource managers across the state are working to restore fire into Kentucky's forests and open lands in a manner to more closely mimic natural fire regimes through the use of controlled burns. Using fire as a management tool can greatly enhance the plant and wildlife species diversity of an area, restoring many habitat types which have become very rare in our landscape.

*The image above is of unburned (left) and burned woods (right). Notice how "thick" the unburned woods on the left are compared to the burned woods on the right where much more sunlight reaches the forest floor and increases the presence of herbaceous plants such as wildflowers and forbs.*

Photo courtesy: Chris Minor

## ***Safety and Proper Planning Paramount***

Fire is a necessary part of functioning ecosystems.

Throughout much of the 19<sup>th</sup> and 20<sup>th</sup> centuries, however, fire was considered a purely destructive force and was excluded from the landscape. With fire exclusion eliminating several important plant and animal communities of our upland habitats and with the close proximity of homes to the forest edges, fire practitioners recognize the important distinction between good fires and bad fires—with safety as the primary factor.

### ***Bad Fire***

Unplanned, uncontrolled wildfires (often the result of arson) can create unpredictable fire behavior, including high intensity and fast-moving flames that put people and property at risk. Each year, an estimated 700 homes and structures in Kentucky are threatened by wildfire, and approximately 30 are lost. Wildfire also often results in significant smoke impacts on communities and roads, posing a public health and safety hazard.

### ***Good Fire***

Controlled, or “prescribed,” burns are planned events and implemented in a manner to minimize hazards to people and property. Careful analyses of weather conditions and fuel availability allow the burners to choose the most appropriate and safest burning technique, which reduces fire intensity and smoke impacts while restoring important habitats. Areas that have been treated with controlled fire are also less susceptible to out-of-control wildfires.

## ***Typical Uses of Controlled Burning for Habitat Management***

### ***Grasslands, Prairies, and Glades***

Mixed grasses and herbaceous plants dominate, with trees mostly occurring along streams or as the area transitions to savanna and woodland. Controlled fire can be applied to this habitat type approximately every 1 to 3 years to maintain and improve plant species diversity. Dormant season burns can be used to promote the grasses, and growing season burns control woody invasion and increase diversity of wildflowers.

### ***Mixed Oak or Oak–Pine Savanna***

These forests are dominated by oaks and shortleaf pine; the trees are widely scattered with large gaps between their crowns. Canopy coverage in this habitat type is generally 25 percent or less. Substantial light reaches the forest floor, allowing grasses and other fire-adapted plants to create lush ground cover.

### ***Mixed Oak or Oak–Pine Woodland***

These forests are dominated by oaks and shortleaf pine. The trees grow less densely, so their crowns are not touching. Crown closure will be between 25 and 60 percent in this habitat type. The open canopy allows light to reach the

forest floor, where some fire-adapted grasses, sedges, and wildflowers flourish after fire removes the leaf litter.

### ***Oak–Hardwood/Oak–Pine Forest***

These are the most common forests in Kentucky. This forest occupies south-facing slopes, ridge tops, and the upper portions of most other aspects. These forests are dominated by oaks, hickories, and shortleaf pine. The trees grow somewhat densely, with at least 60 percent of their crowns touching, creating a mostly closed canopy. Fires moving through these forests remove leaf litter to allow a profusion of wildflowers, grasses, and sedges to occur while controlling the invasion of these sites with more shade-tolerant and fire-intolerant species such as maples, beech, and hemlock.

### ***Mesic Forest***

These forests are generally on our northerly facing slopes and along streams, dominated by maples, beech, basswood, hemlock and other moist site loving trees. The canopy is generally closed. Fire does not play a major role in shaping these areas of the landscape. Generally when fire reaches these areas moisture and inadequate fuels take over and the fire sputters out.

## ***Conducting a Controlled Burn on Your Lands***

Safety is of primary concern when re-introducing fire to our natural ecosystems. Doing this work in a safe manner requires trained personnel, adequate equipment, and a lot of planning and forethought. If you are interested in utilizing controlled burning as a management tool you should work with professionally trained fire practitioners to plan and implement your burns in a safe and efficient manner to achieve your goals. Technical guidance and assistance for you may be available from the Kentucky Department of Fish and Wildlife Resources, U.S. Forest Service (if your land is adjacent or within the national forest boundaries), The Nature Conservancy (in selected high-priority project areas where TNC works) or from a growing number of consultants. OR, become a trained fire practitioner yourself. The Kentucky Prescribed Fire Council will be providing controlled burning workshops for landowners in the near future.



*Drip torches are used in controlled burns. They are used to start controlled burns as well as set backfires. A backfire is used to consume fuel in front of the fire or to control the direction of the fire.*

*Photo courtesy: E.J. Bunzendahl*

## ***Timing Controlled Burns for Targeted Ecological Results***

When working with your professional technical advisor, you will need to set your goals based upon what the his-

toric natural forest or grassland community would have been for your property and what you want your woods and open lands to look like in the future. Then a plan based upon the current conditions of your property will be developed to reach those goals. In some instances timber stand improvement practices such as thinning and harvest may be incorporated to reach your habitat restoration goals. In addition, depending upon your restoration goals, the fire prescription will also take into consideration the seasonal timing, desired fire intensity, fire return frequency, and appropriate weather conditions to achieve the desired fire effects.

By working with a trained fire practitioner a Prescribed Burn Plan will be prepared which will take into account all of the safety precautions which should be considered for your burn. This plan would address acceptable weather conditions (temperatures, wind speeds, wind directions, humidity levels), natural and man-made fire breaks, smoke management, fuels to be burned, equipment needs, personnel needs, contacts and permissions needed, and contingency plans.

## References

Information pulled from brochures, unpublished reports and team working session notes from the Kentucky Prescribed Fire Council, the Cumberland Fire Learning Network plans, Land Between the Lakes Fire Learning Network plan.

### About the Author:

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## From the Woods...

*Kentucky Woodlands Magazine recently interviewed Bert Pearson, Oldham County woodland owner, to learn his experiences with fire. He worked with the Kentucky Department of Fish and Wildlife Resources (KDFWR) to implement controlled (or prescribed) fire on his property.*



**KWM:** How has prescribed fire helped you with your property?

**Bert:** In both the case of woodland and open field burns, burning is a great tool for returning the nutrients held in the dead organic material (brush, grass, woody material) back into the soil. These controlled or prescribed burns also eliminate the clutter of dead material, which impairs movement of small animals and birds and reduces the chance for large unplanned fires in the future.

**KWM:** How did you learn about prescribed fire?

**Bert:** When I purchased my property I reached out for support from the private lands biologist with the Kentucky Department of Fish and Wildlife Resources as well as my service forester from the Division of Forestry. Chris Grash is the private lands biologist I work with and before I accomplished my first burn he provided me with a “burn plan”, which provided an overall plan for the burn, including weather conditions, restrictions and equipment required for a safe burn.

**KWM:** Tell us a little about your prescribed fire experience?

**Bert:** My personal burn experience has been in preparation for native grasses and wildflower plantings. The first attempt was less than ½ acre and I quickly learned the advantages of back burning or setting fires on the downwind side of the area to be burned and letting the fire burn slowly into the wind. Fire can move quickly across a field and having multiple fire breaks is advantageous. I was astonished at how the vegetation returned to a burned area quickly as well as the lushness of the vegetation.

**KWM:** What advice do you have for other woodland owners considering using prescribed fire?

**Bert:** First, I would recommend contacting your private lands biologist, whom you can find on the KDFWR web site, to provide a burn plan. I would do some reading to become familiar with prescribed fire. For weather information, visit the UK College of Agriculture weather web site at <http://www.agwx.ca.uky.edu>. Notify the local authorities of your burn plans. Lastly, I found out you can't have too many friends available when you are burning, to help oversee the project.



Woodland owners should work with natural resource professionals to determine if fire is an appropriate management tool for their property.

# IMPLEMENTING CONTROLLED FIRE ON YOUR PROPERTY

by Chris Garland

The historical use of fire for habitat management and the beneficial uses of prescribed fire for wildlife management are both well documented.

Some of these benefits include reducing invasive species, managing grassland communities, removing excess leaf litter, releasing seed for germination, increasing species diversity, controlling disease, and reducing hazardous fuels.

The first step for landowners interested in using controlled fire as a management tool is to have a resource professional evaluate both the property and habitat objectives to see if controlled fire is needed or feasible. Wildlife biologists are available through the Kentucky Department of Fish and Wildlife Resources to provide assistance ranging from technical guidance to a full management plan based on your interests and objectives for your property.



You can get started by determining the private lands biologist for your area at [www.fw.ky.gov](http://www.fw.ky.gov) or 1.800.858.1549. Other state, federal, and non-governmental organizations may also be able to provide technical assistance.

Depending on your property's size, location, and your management objectives, your private lands biologist can assist you in determining if fire is a viable alternative for your property or if other management practices would be more suitable.

If burning is the management practice needed to achieve the desired result, the next step is to develop a prescribed burn plan. This plan should detail the size and location of the burn and how the burn will be carried out. Items typically included in the burn plan are as follows:

**Map:** The map should include the area to be burned, notation of adjacent landowners, topography, control lines, wind and smoke direction, smoke-sensitive areas, water sources, roads, and structures.

**Equipment** needed to safely conduct the burn.

**Fire Prescription:** This information will detail the weather and fuel parameters needed to safely conduct the burn, the time of year, and time of day you plan on conducting the burn.

**Firing Plan:** This plan includes insuring fire breaks are within suggested guidelines and choosing the correct ignition points and firing pattern based on current weather parameters and desired results.

Once the plan is developed, the landowner must install the control lines or fire breaks around the perimeter of the burn unit in accordance with the burn plan. There are several types of fire breaks, including natural firebreaks, constructed breaks, existing vegetation, etc. Your burn plan should detail the types and locations of all firebreaks needed to conduct the burn.

The final step is to monitor weather and plan for conducting the burn during the months specified in your burn plan. Notify all surrounding landowners, local dispatchers, and resource agencies at least 24 hours prior to and again immediately prior to ignition. It should be pointed out that safety should be the first priority when conducting any prescribed burn. Weather conditions can change drastically during a burn, and conditions can become too unsafe to continue.

Several natural resource agency professionals are available to provide technical assistance for habitat improvement on private properties. The Kentucky Department of Fish and Wildlife Resources or a private vendor may also be able to provide a prescribed burn plan or assistance in conducting the prescribed fire. The availability of assistance with the actual burn is widely dependent on location, program participation, scheduling, weather, and timing with available staff and should be planned at least a year in advance through your local resources professional.

For more information, contact your resource professional or KDFWR private lands biologist at [www.fw.ky.gov](http://www.fw.ky.gov) or 1.800.858.1549.

**About the Author:** *Chris Garland, assistant director of the Wildlife Division of the Kentucky Department of Fish and Wildlife Resources, oversees the five wildlife regions and regional coordinators for each region as well as the state's Wildlife Management Areas.*

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## KWOA benefits Kentucky Woodland Owners

[www.kwoa.net](http://www.kwoa.net)

The Kentucky Woodland Owners Association and Foundation Annual Meeting provides a resource-packed and enjoyable setting for woodland owners to interact with forestry professionals and peers about issues of concern and topics of interest regarding the management of their properties. Members get an overview of the association's priorities and its activities in the state legislature as well as communities across the state. University and agency forestry experts are available for questions, discussion, and consultation.

The annual meeting convenes at a different state park each year so members can spend a little time looking at forest management practices in and around the park guided by field professionals. A guest speaker brings their view to the podium regarding the present and future state of private woodlands. This year several forestry students from UK will be attending and available for comments on their vision of what Kentucky's woodlands mean to the next generation. We will also present the Service Forester of the Year Award and elect officers and board members for 2012. A banquet and a competitive round of Forest Trivia round out the meeting.

The 2012 annual meeting will be held at the Pennyryle State Park, in Hopkins County. Lodging is limited at the state park, so reserve your accommodations early and plan to attend this informative and recreational event. Ask for the KWOA rates. For more specifics on the meeting and agenda, visit [www.kwoa.net](http://www.kwoa.net)

**KWOA Happenings**  
The Kentucky Woodland Owners Association is continually working on behalf of Kentucky's woodland owners. Below is a sample of recent efforts:

Timber market information is a concern for woodland owners. Tim Friebert's committee is seeking access to additional market information. Efforts are under way with the state market offices and the Kentucky Department of Agriculture to improve the flow of this important information.

The forestland assessment and equitable timber tax committee is spearheaded by Jim Corum and has conducted numerous meetings and conference calls with the Kentucky Revenue Cabinet in Frankfort seeking a fair tax assessment of Kentucky's woodlands.

The Kentucky Agricultural Council is convening a strategic planning committee to develop a five-year Strategic Plan of Action for Kentucky Agriculture. Charlie Williams, Hart County Tree Farmer and Don Girton, Campbell County Tree Farmer, are representing KWOA.

Greg Kuhns, KWOA past vice-president, and Art Williams, the executive director of the Kentucky Conservation Committee, along with representatives from seven other organizations met recently with Cabinet Secretary Dr. Len Peters of the Energy and



*A variety of woodland related educational and entertaining events are scheduled for the 2012 KWOA Annual Meeting.*

*Photo courtesy: Doug McLaren*

Environment Cabinet concerning requirements of the new Commissioner of Natural Resources. Dr. Kuhns pleaded the case for more funding for the Kentucky Division of Forestry and how its service foresters are key to getting forest management plans, obtaining woodland certification, and meeting qualifications for receiving USDA/NRCS funds.

Timber theft is an increasing problem, especially for absentee owners. Nina Cornett is meeting with legislative committees and also preparing a series of educational video programs that feature interviews with Kentucky woodland owners and others emphasizing the breadth and depth of timber theft. The information can be accessed on the web: <http://ecooutpost.org>.

The Kentucky Woodland Owners Foundation (KWOFF), a 501(c) (3) tax-exempt organization affiliated with the Kentucky Woodland Owners Association (KWOA), is offering a forestry scholarship to a deserving forestry student and is currently accepting donations and contributions toward our educational endeavors. Contact Doug McLaren at 859.257.2703 for details.

Please consider joining and supporting the Kentucky Woodland Owners Association.

**For more information log on to [www.kwoa.net](http://www.kwoa.net)**



*Wildfires are a common occurrence in Kentucky. Millions of dollars are spent in controlling them annually; unfortunately most fires in Kentucky are attributed to arsonists.*

**W**ildland fires continue to plague Kentucky woodlands. From 2001 to 2010, the Kentucky Division of Forestry (KDF) reported that 15,585 wildland fires occurred, affecting 517,492 acres. Man caused 99 percent of the fires, with lightning responsible for 1 percent. Unfortunately, data indicate that 61 percent of the fires were attributed to arson. Wildfires cost taxpayers in suppression costs, create long-term damage to timber values, impact the forest ecosystem, and can cause immediate loss of property and human life. In 2006 the Governor’s Task Force on Wildland Arson detailed that from 2000 to 2006, KDF spent an estimated \$20.1 million on direct wildland fire suppression costs, averaging \$2.87 million per year! Estimates of loss of property value and human life were not included in this work. While it is widely known that wildfire can cause long-term reductions in timber volumes and values, little data was available for the task force to make estimates on this issue. In 2008 KDF sponsored a research project conducted by the University of Kentucky Department of Forestry to provide estimates of the long-term timber value loss attributed to wildland fires.

# Wildland Fires’ Long-Term Costs to Kentucky’s Woodlands

*Photo courtesy: Kentucky Division of Forestry*

*by Christopher Reeves and Jeff Stringer*

Collecting data for this determination is difficult because of the lack of accurate historical fire histories in the region. Significant time was spent by researchers finding and selecting 10 pairs of stands in eastern Kentucky and Tennessee where one of the stands in the pair had a well-established fire history and the other stand had no history of fire. Further, the researchers also needed the paired stands to encompass a wide range of fire disturbance from mild to severe and had no other forms of recent or recorded harvests or other disturbance — a difficult thing to find in the region. Stands ranged in size from 11 to 35 acres. Each stand in the pair had similar soils, topography, management history, and the stands were located in close proximity (<1/2 mile). The fires ranged from a small fire ten years before the study, a devastating canopy fire five years before the study, and several stands with small repeated fires over the last three decades. Detailed analysis of species composition, timber volume, and cull deductions were made on all stands. A consulting forester measured and estimated the timber value and board foot (BF) volume in each stand using common timber estimation techniques and by felling and cutting into two foot sections a subset of trees to determine detailed cull deductions and determinations of net timber volume. BF volumes and dollar values lost by fire were determined by subtracting the calculated values in the burned stands from the unburned stands.

Table 1 shows the wide range of volume lost from 330 bf/ac to 4,930 bf/acre with a range of 12 to 56% of the total volume lost to fire. Value losses range from \$8.57 per acre up to \$1,222.44 per acre with a percent loss of total value from 5 to 65%.

One important aspect of this study was to determine where the loss of value comes from. Is most of the devaluation from volume lost due to internal tree rot resulting from wounds caused by the fires, or is it from less obvious changes in stand composition and structure? Fire in our region is generally confined to the forest floor and

**Table 1. Board Foot and Dollar Loss per Acre from Wildland Fires**

Paired Stands	Board Feet per Acre			Dollars per Acre		
	Burned	Unburned	Loss	Burned	Unburned	Loss
1	2,070	3,900	1,830	\$228	\$336	\$109
2	2,280	4,360	2,080	\$158	\$362	\$204
3	3,910	5,480	1,570	\$299	\$400	\$101
4	2,470	5,840	3,370	\$109	\$631	\$522
5	2,560	5,940	3,380	\$135	\$661	\$526
6	4,570	6,790	2,220	\$348	\$731	\$384
7	5,620	6,790	1,170	\$441	\$731	\$291
8	3,870	8,800	4,930	\$649	\$1,872	\$1,222
9	6,560	8,660	2,100	\$1,228	\$1,902	\$673
10	2,380	2,710	330	\$173	\$181	\$9
Average	3,629	5,927	2,298	\$377	\$781	\$404



moves through the litter. Fire damages the base of the tree, and the resulting heartrot affects the volume and the value of the lowest log contained in the tree. This rot generally increases and continues to progress as the tree continues to decay. The unburned stands were used to assess the internal volume loss attributed to causes other than wildfire, and this value was used along with the total volume loss in the burned stands to determine the volume loss attributed to wildfire in the burned stands. Wildfires can also change the species composition and overall density and structure of woodlands. Structural changes include killing whole trees and changing regeneration. Repeated fires, if intense enough, can also lead to a continued “resetting” of tree ages in a stand, resulting in a reduction in overall timber volume and value.



Wildfires can lead to internal decay in trees by damaging the base of the tree and opening it up to decay agents such as fungus, diseases, and insects.

The amount of volume and value lost from rot was easily determined using the paired stands by calculating the change in volume and grade of individual trees that had internal rot produced from fires. This calculation was possible because of the detailed analysis of individual tree internal rot determined from trees in both the burned and unburned stands in each pair. The loss due to changes in stand structure was determined through the comparison of stand-level data that included species composition, size, grade, volume, and other parameters affecting value. Table 2 details the results. In this study an average of 38 percent of the BF timber volume per acre was lost due to wildland fires. Over two-thirds of volume loss was due to structural change (whole tree mortality and age/size class changes), while less than a third of the volume loss was due to cull (individual tree rot and grade changes) produced from the fires. An average of 47% of total value was lost from wildland fires. Nearly three-fourths of this loss was from a long-term change in stand structure and only one-fourth due to cull loss. The results from this study indicates that the common perception that the primary degradation

from wildland fires is the production of internal heartrot may be over simplistic and underestimate the devaluation associated with wildland fires.

**Table 2. Contribution of Cull and Structural Change to Total Value and Volume Loss from Wildland Fires**

	Lost to Cull	Lost to Structural Change	Total Loss
\$/acre	13.1%	34.3%	47.4%
BF/acre	8.9%	29.1%	38.0%

The data also were analyzed to determine if there was a relationship between slope position (upper, middle or lower slope) and volume loss. As expected, the data showed a trend for highest volume loss in the upper slope position (43 percent) compared to mid and lower slope positions with 38% and 26% volume loss, respectively. The burned stands were also classified into one of 10 fire severity index ratings.

One represents a stand with a low severity of fire disturbance as indicated by being subject to only one event described as a low-intensity ground fire, and 10 represents multiple events described as high-intensity ground fires or a single canopy fire. As expected, this analysis indicates a positive relationship between the index and value loss and shows that a single low-intensity wildland fire has minimal impact on timber value, while stands subjected to multiple low-intensity burns or an intensive single burn result in significant (greater than 20 percent) loss.

While this study was designed to investigate the detailed devaluation of stands subjected to wildland fires, the results (most importantly the average per acre volume and value losses) cannot be used to provide blanket loss estimates for an individual fire. Specific loss information requires an assessment of actual fire damage, which is



Photo courtesy: Christopher Reeves

*Most wildfires in Kentucky are predominately “ground” fires—notice the fire marks on the trees in the image. Even though these wildfires do not reach the canopy they cause significant damage and value loss with the majority of that loss associated with stand structural change.*

related to fire parameters and species present. However, the data can be used to provide general estimates and ranges associated with fire damage in the state. Regardless, wildland fire does have long-term effects on timber values. The KDF, as is true for a large number of state and federal agencies, spends millions of dollars on fighting fires. However, given the potential long-term devaluation that can occur from wildland fires these expenditures are warranted. The time to avoid potential damage to your timber is before a fire approaches and moves through your woodlands. Please contact the Kentucky Division of Forestry or a professional forester to help protect your woodlands from financial impacts from wildland fire by completing a woodland management plan with an eye towards reducing the risk of wildfires in your woodlands.

**About the Authors:**

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*Wild pigs like the one below (captured by a trail camera) are becoming wide spread in Kentucky. They can do severe damage to woodland owners' properties through rooting and hog wallows, eating acorns, damaging tree seedlings, and displacing native wildlife.*

# Wild Pigs in Kentucky

*by Chad Soard and Jason Nally*

*Photos courtesy: Chad Soard*

**P**igs have long been an element of rural life in Kentucky, though in recent years our favorite source for the “other white meat” has emerged as a new presence in our fields and forests. These free-ranging pigs have been given many names including razorbacks, rooters, and wild boar, but in truth they are little more than domestic pigs living independent of people. Correctly termed wild or feral pigs, this species is simply an exotic pest posing serious ecological, economical, and disease threats.

If you have lived or spent much time in more southeastern states you may be well acquainted with the ills of wild pigs. In fact, they have been present throughout much of the southeastern United States since the 1500s, descendants of domestic pigs accompanying early European explorers as livestock. Historic practices of allowing pigs to range freely and regular releases of pigs over the following centuries encouraged their spread. Moreover, in the first half of the 20th century Eurasian wild boar, the wild species from which pigs were domesticated, were imported on several occasions to hunting preserves. Subsequent escapes from preserves and purposeful releases of Eurasian wild boar over the following decades augmented local feral populations with which they freely interbred. Such interbreeding introduced “wild boar” physical characteristics into successive generations of wild pigs consistent with those regularly seen in modern populations. From the 1950s through the late 1970s additional movements and releases by private individuals and some state wildlife agencies further expanded

the range of wild pigs in the southeast, establishing them as a popular game species in some states.

In Kentucky, it is illegal to possess, transport, or release wild pigs, and a sanctioned release has never occurred. Nevertheless, wild pigs have been present in the Cumberland Plateau region of Tennessee since the 1960s, and their dispersal into Kentucky was first documented in 1988. Public reports of wild pigs in Kentucky remained relatively uncommon until the 1990s when sporadic reports began to emerge from the Dale Hollow Lake area of Cumberland County and the Big South Fork National River and Recreation Area in McCreary County. Today, verified sightings and documented hunter kills have been confirmed in approximately one-third of Kentucky’s counties. Clear disconnections between emerging wild pig populations have made it apparent that natural population expansion is not solely responsible. Rather, many of these populations have been created through illegal releases in an attempt by misguided individuals to create a recreational hunting opportunity.

Regrettably, the establishment of wild pig populations is not difficult and has now occurred across Kentucky and in at least 45 states. The remarkable adaptability of this species has aided its spread across diverse habitats and climatic conditions. Compound this adaptability with an incredible reproductive potential, and the problem is clear. Sows are capable of having two litters of greater than 10 piglets per year, and reproduction is not seasonally bound. In addition, juvenile pigs reach reproductive maturity by only 6 to 10

months of age. Population growth can be explosive, and damage associated with pigs will increase simultaneously.

Most Kentuckians are fortunate enough to have never seen or experienced wild pig damage, although the threats posed by this exotic pest should concern us all. In parts of the Commonwealth farmers are experiencing crop depredation with reported losses in the tens of thousands of dollars; losses can be expected to increase as wild pig numbers grow. In addition, wild pigs are one of the most active carriers of wildlife-related disease, and at least 45 parasites and diseases transmissible to livestock, pets, wildlife, and people have been identified. All threats posed by wild pigs are equally alarming, but it may be the ecological damage that hits closest to home for those of us who manage the land for wildlife or timber.

Ecological damage related to wild pigs occurs both in the short and long term. Most conspicuous is the disruption to the ground and soil processes from pig rooting and wallowing behaviors. The voracious appetite of pigs has farther reaching impacts. Acorns and other hardwood mast represent a major food source for wild pigs; forest regeneration can be significantly altered in areas of high pig abundance as they may leave few seeds to germinate. Even tree seedlings are not safe from pigs and may be uprooted, trampled, and in some cases consumed. Sensitive or imperiled plant communities are particularly threatened by rooting, wallowing, and trampling activities often resulting in irreversible damage. Faunal communities also suffer as native wildlife is often displaced by wild pigs through competition for food and space. Moreover, wild pigs are relatively indifferent in their forage selection and will consume most any available invertebrate or vertebrate prey including reptiles, amphibians, ground-nesting bird eggs, and even deer fawns. Abundant other ecological stressors related to wild pigs could be cited; though illustrating the significance of the threat takes very few.

Relative to other states wild pig numbers in Kentucky remain low, and properly implemented control is effective. Although rooting is

the most recognizable sign that pigs are frequenting your property, several other tell-tale signs may be left by wild pigs. Tracks, rubs, hog wallows, droppings, beds, and trails may also be present if pigs are using your property. Look for these signs to determine the travel routes that pigs are using to access

your property. Concentrating control efforts along these routes can significantly increase the success of your eradication efforts.

The allure of hunting wild pigs has been one of the main factors in the spread of their populations, but hunting has been proven time and again to be ineffective in eliminating wild pig problems. Experience shows that when pigs are hunted they will do one of two things: become nocturnal or leave the property. This response to hunting is not beneficial to you or neighboring landowners. If you regularly see a lone pig on your property it is effective to shoot the animal, but if you are seeing multiple pigs your best strategy is to establish



*Corral traps like the one above have proven to be a successful strategy for controlling wild pig populations. The Kentucky Department of Fish and Wildlife Resources provide woodland owners with technical and cost-share assistance for dealing with wild pigs on their property. See the links at the end of this article for more information.*

corral traps around areas of abundant pig sign and intensively trap those animals. Hunting can then be used as an effective method in removing trap shy animals that remain in the area after you have exhausted your trapping efforts. Kentucky Department of Fish and Wildlife Resources private lands wildlife biologists are available to help you develop a management plan for trapping pigs on your property. Although trapping wild pigs can become expensive, the cost is far less than the economic impact of not controlling wild pig populations. Cost-share assistance is also available through the KDFWR Habitat Improvement Program. If you would like to learn more about trapping wild pigs or applying for cost-share assistance, please contact KDFWR headquarters at 1.800.858.1549, or visit our website.

### *Useful links for starting to develop a wild pig management plan.*

<http://fw.ky.gov/navigation.aspx?cid=976&navpath=C741C921>

<http://fw.ky.gov/app2/navigation.aspx?cid=975&navpath=c741c753c921>

[http://fw.ky.gov/kfwis/viewable/privatelands\\_biologists.pdf](http://fw.ky.gov/kfwis/viewable/privatelands_biologists.pdf)

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*This group of wild pigs was spotted by a trail camera. Although, hunting wild pigs may seem like a good option it often results in the pigs moving to a neighboring property or only coming out at night—the better option is to trap them.*

# FORESTRY 101

## Steps to Defend Your Home from Wildfire

by Diana Olszowy

Photos courtesy: Kentucky Division of Forestry

**F**or whatever reason you decided to build your home next to or within woodlands, please understand that your home could be in danger from wildfires. Most of Kentucky's wildfires are caused by humans – 99%, as a matter of fact. Some are accidental, such as unmonitored debris burning, campfires, and sparks from farm equipment, but sadly, many are intentionally set.



*Wildfire can quickly spread from burning woodlands to your home. Fortunately, there are a number of steps that homeowners can do to make their homes better prepared.*

One of the ways of protecting your home from wildfire is to create defensible space (see Kentucky Woodlands Magazine, Vol. 2, Issue 2, "The Good, the Bad and the Firewise" on page 12). Defensible space is simply defined as the area around a structure where forest fuels and vegetation are treated, cleared, or reduced to slow the spread of wildfire toward the structure. The creation of defensible space also reduces the chance of a structure fire moving from the building to the surrounding forest. Your home is more likely to withstand a wildfire if grasses, brush, trees, and other common forest fuels are managed to reduce the fire's intensity.

Many folks don't view the plants growing on their property as a threat. All vegetation, including native and non-native plants, can serve as potential fuel for a wildfire. If vegetation is properly maintained, a wildfire can be slowed, the length of flame shortened, and the amount of heat reduced. All of these factors can assist firefighters in defending your home.

When creating defensible space around your home, there are three main steps that you will need to follow:

1. **Lean** – prune shrubs and cut back tree branches, especially those within 15 feet of your chimney.
2. **Clean** – remove all dead plant material from around your home; this material includes dead leaves, dry grass, and stacked firewood.
3. **Green** – plant fire-resistant vegetation that is healthy and green for most of the year.

### How Firewise savvy are you?

Use this checklist to determine if your home and property are adequately protected:

- Use low-growing, herbaceous (non-woody) plants that stay green during the fire season. Herbaceous plants include grasses, variety of ground covers, bedding plants, bulbs, and perennial flowers.
- Use mulches, rock, and non-combustible hard surfaces (concrete, sidewalks, brick patios, and asphalt drive ways).
- Keep deciduous, native, and ornamental trees and shrubs healthy and free of dead branches.
- Minimize the use of native and ornamental coniferous shrubs and trees (such as juniper, arborvitae, and mugo pine) and tall exotic grasses.
- Retain small groups of wild shrubs and trees as long as they are kept free of deadwood and pruned to reduce the amount of fuel. Keep vines from crawling up onto the house – they can serve as fuel ladders to your roof.
- Remove tree limbs that grow within 15 feet of a chimney, encroach on power lines, or touch the house.

By changing the characteristics of the surrounding vegetation, you will reduce the wildfire threat to your home. Please realize that there are NO fireproof plants, but some are more fire resistant than others. Suggested species include:

Basswood	Dogwood	Kentucky coffeetree	Persimmon
Birch	Elm	Locust	Poplar
Blackgum	Hackberry	Magnolia	Redbud
Buckeye	Hawthorn	Maple	Sassafras
Buttonbush	Hazelnut	Mulberry	Serviceberry
Catalpa	Hickory	Oak	Spicebush
Cherry	Hophornbeam	Pawpaw	Sweetgum
Crabapple	Horsechestnut		Walnut

A landscape is a dynamic system that constantly grows and changes. Plants considered fire resistant with low fuel volumes can lose these characteristics over time. Your landscape and the plants in it must be maintained to retain their “Firewise” properties.

- ❑ Be aware of the growth habits of the plants within your landscape and of the changes that occur throughout the seasons.
- ❑ Remove annuals and prune perennials after they have gone to seed or when the stems become overly dry.
- ❑ Rake up leaves and other litter as it builds up through the season.
- ❑ Mow or trim grasses to a low height within your defensible space (approximately 30 feet).
- ❑ Remove plant parts damaged by snow, wind, frost, or other agents.
- ❑ Prune all plants, trees, and shrubs in a timely manner; this step is critical. Pruning not only reduces fuel volumes but also results in healthier plants by producing more vigorous growth.
- ❑ Maintain your landscaping. This step is an important part of your home’s defense system.
- ❑ Maintain your defensible space, or it will be compromised through lack of maintenance.

Maintenance provides fire safety. Over time, plants grow and spread; mulches dry out; leaves and pine needles accumulate. All these factors contribute to the fuels from which a fire grows. Proper maintenance improves the appearance and helps protect your home from wildfire.

- ❑ Adequate defensible space is available. A minimum of 30 feet around the home and each structure is needed.
- ❑ The grass is mowed regularly and leaves and pine needles are cleared within the defensible space area.
- ❑ The firewood is stacked or stored at least 30 feet from the house.
- ❑ A hose that reaches all the way around the house is readily available (a 100-foot hose is recommended).
- ❑ The propane (LPG) tank is located at least 10 feet from the house and weeds, tall grasses, and vines have been cleared.

- ❑ Tree branches overhanging the roof have been pruned within 15-20 feet of the chimney.
- ❑ A mobile home should have underpinning/skirting materials all the way around the structure to prevent the accumulation of flammable debris.
- ❑ The driveway can accommodate local fire department vehicles (it should be 12-feet wide or larger).
- ❑ The house number is highly visible on the home (at least 4 inches tall) and at the entrance of the driveway.
- ❑ The gutters are free of dead leaves, moss, pine needles, and twigs.
- ❑ A ladder, fire extinguisher, and hand tools such as rakes, shovels, and axes are readily available.
- ❑ A spark arrester has been installed on the chimney (a 1/2-inch mesh screen is recommended).
- ❑ An escape plan has been developed and discussed with family members.
- ❑ Your homeowner’s insurance policy has adequate coverage for the costs of rebuilding and repairs needed in the case of a catastrophic wildfire.



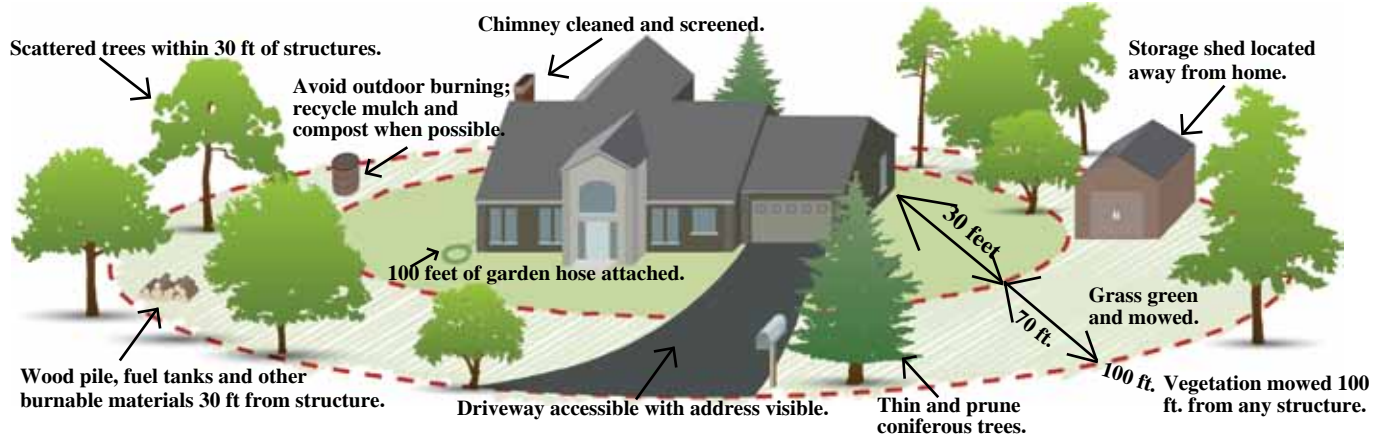
*Simple tasks such as keeping your gutters free of debris can help make your home more Firewise by reducing the likelihood that a burning ember will start a fire in your gutters.*

For more information about Firewise practices, visit the Division of Forestry’s website at <http://forestry.ky.gov/wildlandfiremanagement/Pages/KentuckyFirewiseProgram.aspx> or visit the national Firewise Communities website at [www.firewise.org/](http://www.firewise.org/).

**About the Author:**

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*This diagram depicts a Firewise home. How prepared is your home? Being prepared for wildfire is especially important if your home is near woodlands.*



# Kentucky Tree Farm Committee Newsletter

## *Take the time to Review Your Tree Farm's Management Plan*

Your woodlands are constantly changing. Seasons come and go, trees grow and die, weather and timber markets vary, and natural disasters or invasive species can take their toll. And just as your Tree Farm changes, you and your family do, too: a major life event, such as a birth, death or illness, can alter your relationship with your woodland. Take the time to reflect on what happened last year, how your woods were affected, and what you may choose to do differently in the future. This review of your management plan and goals does not have to be daunting or difficult. It can mean adding just a few handwritten notes to your plan, and it can start with a simple walk in your woods.

The following easy steps can assist you in reviewing your management plan:

- Take a walk in your woods. Look for signs of stress and check the condition of all your Tree Farm's resources—not just the trees themselves, but the soil, vegetation, water sources and drainages, and wildlife as well.

Ask yourself these questions:

- Is my Tree Farm progressing the way I want it to? If you battled pests or invasive plants last year, re-visit treated areas to take stock of their recovery. Make note of herbicide applications and other vegetation control methods used and how your woods responded, so you know what has worked for you and what has not.
- Have I properly planned for and protected wildlife habitat?
- How have I handled threats to my Tree Farm?
- Are my roads and trails adequate and in good condition? Road access is critical for harvesting, maintenance, and for fighting fires. If building or repairing roads and trails needs a place on your list of activities planned for the year, it's better to know sooner rather than later.
- Are my property boundaries clearly marked? Are there signs of trespass?

Keep fences and boundaries in good shape to protect your resources and keep out unwanted visitors. If you have acquired or parted with property, you will need to update your management plan map and inventory information.



*Woodland resources change over time.  
Walk your woods to take stock of these changes  
and ensure your management plan is still on track.*

Walking through your Tree Farm as you consider these basic questions is the easiest and most effective way to update your management plan. The experience should give you a sense of how your Tree Farm is doing and how far it has come since you last reviewed your property and your goals for its progress. Knowing where your woods are now will help you plan for where you want them to be.

## *Kentucky Tree Farmer and Logger of the Year Finalists Announced*

The Kentucky Tree Farm Committee is in the process of reviewing award finalists for the 2011 Kentucky Tree Farmer and Logger the Year awards. Narrowing the list down to the finalists was a daunting task, as each nominee was a strong candidate. The winners will be announced at the 2012 Kentucky Forest Industries Annual Meeting, which will be held March 28-30, 2012, in Louisville.

### **2011 Kentucky Tree Farmer of the Year Finalists**

- Mike Harvey, Campbellsville
- Larry York, West Liberty
- Tim and Tom Mracek, Bowling Green

### **2011 Kentucky Logger of the Year Finalists**

- Roger Towe, Towe Logging, Franklin
- Eddie Butler, Vanceburg



## *Invasive Species Video Available*

The Kentucky Sustainable Forestry Initiative Implementation Committee supported the development of a video about Invasive Species presented by the North Carolina Forestry Association. Not only can woodland owners learn more about invasive species but Kentucky Master Loggers and Certified Foresters can receive CEC credits for watching the video and returning the questionnaire with proper form to those organizations. For more information contact the Kentucky Forest Industries Association at 502.695.3979 or visit <http://kfia.org/AboutSFI.aspx>

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# Non-Timber Forest Products

## Beekeeping

by Phil Craft

*Honey bees are important insects that help agriculture through pollination and supply a sweet treat for our breakfast tables.*

*Photo courtesy: Pest and Diseases Image Library, Bugwood.org*

**H**oney bees have been a part of the forests of Kentucky since our first settlements were established in the late eighteenth century. Though not native to the American continents, honey bees came to the new world with early colonists, who brought them across the Atlantic Ocean to provide honey and beeswax. Once here, the bees adapted easily; many plants and trees provided good sources of nectar and pollen, and hollow trees for colony sites were abundant.

The relationship between our forests, honey bees, and bee keeping continues today, as the demand for local honey increases and some of the most popular varietal honeys derive their distinctive flavors from the nectar of native Kentucky trees. These include black locust, sourwood, yellow-poplar, sumac, and basswood (called “lyn” in the Eastern Kentucky mountains). Most basswood honey comes from the higher elevations of Eastern Kentucky. Sourwood honey is produced there and as far west in southern Central Kentucky as McCreary County. Black locust and yellow-poplar honey, like the trees themselves, are found throughout Kentucky; although black locust honey is more widely produced.

Honey production is a complex process. It begins with the many plants which require an exchange of pollen for fertilization and seed production. To attract pollinators, these plants produce nectar from organs within their flowers (and occasionally elsewhere on the plant) called nectaries. Nectar is a natural sugar solution which bees—and not just honey bees, but bumblebees and others as well—collect and concentrate into honey.

The bees incidentally collect small amounts of pollen on the hairs which cover their bodies and

*Tree flowers, like those of black locust pictured here, allow honey bees to create some of the most popular honeys available in Kentucky. Other trees such as yellow-poplar, sourwood, sumac and basswood supply nectar which also makes distinctive honeys.*

*Photo courtesy: Phil Craft*



carry it with them as they go from flower to flower, resulting in cross pollination and, ultimately, seed production. (Honey bees also collect pollen as a protein food source, but this activity is not directly related to achieving pollination.) This symbiotic relationship results in food for the bees and a means of propagation for the plant.

Honey bees transport the collected nectar from the flower sources back to the hive in special sacs in their bodies called honey stomachs. There, through a series of processes, the nectar’s moisture content is reduced from more than 50 percent to 18 percent or less, and enzymes produced by the bees convert the sugars in the nectar into those which constitute honey. In addition to water and various sugars, nectar contains other minor components such as organic oils and pigments. The combination of sugars and these minor ingredients are unique to each species of plant, resulting in nectar from different plant sources producing honeys with distinctive tastes and color. For instance, black locust produces a light colored honey with a delicate flavor; yellow-poplar produces a stronger tasting, dark honey.

In addition to the distribution of a particular species, an important factor in the production of varietal honeys from trees in Kentucky is concentration in a given area. If a certain type of tree is widely scattered, the nectar from those trees may become only a small component in honey produced by a local beekeeper’s bees and hives. If, for instance, the area surrounding a beekeeper’s hives has a small number of yellow-poplar trees and white clover blooming in abundance, a large quantity of clover nectar and a smaller amount of yellow-poplar nectar will most likely be returned to the hive. The result will be a honey that is slightly darker than pure clover honey but much lighter



*Honey bees play a critical role in plant pollination. As the honey bees extract nectar from the plant they also get pollen on their bodies that they then transfer to other flowers facilitating pollination.*

*Photo courtesy: Phil Craft*



than the dark amber of more concentrated yellow-poplar honey.

In the case of some nectar sources, such as black cherry, dilution of the nectar is for the best. Black cherry nectar produces a honey with an unpleasant sharp aftertaste, which consumers do not like and beekeepers would rather not produce. Fortunately its distinct flavor is usually overwhelmed by nectar from other sources, but occasionally a beekeeper will bring me a jar of honey asking, "What is causing this awful taste?" One varietal that should not be encountered is mountain laurel honey. Though laurel nectar is sometimes collected by bees, it is usually only a minor constituent. Laurel honey is poisonous and can result in serious illness if consumed in large quantities.

Fortunately, laurel nectar in concentrations sufficient to be harmful would probably produce honey with such an unpleasant taste that it would not be consumed.

Varietals from trees can be found for sale at local farmers markets and stores throughout Kentucky, but beekeepers in Eastern Kentucky are much more dependent on forest trees for the honey that their hives produce, simply because the area is heavily wooded. If you are looking for a jar of local sourwood or basswood honey, you will probably not find it outside the mountains. Beekeepers find a high demand and get a premium price for their honey locally, and usually do not sell it far from home. Most of Kentucky's beekeepers west of Interstate 75 produce honey from a variety of plants, though white clover often predominates as a nectar source. Many beekeepers, knowing that their bees are collecting nectar from a wide variety of plants, often market their honey as simply "wildflower" honey. As a beekeeper once told me, "My bees just don't tell what it came from."

Many Kentuckians find beekeeping a profitable sideline enterprise. One advantage it has over other agriculture activities



*Kentucky honey is highly sought after because of its outstanding quality and limited availability. Honey bees also produce other benefits such as beeswax, propolis, and royal jelly.*

Photo courtesy: Scott Bauer, USDA Agricultural Research Service, Bugwood.org

is that it requires only a small amount of land for the placement of hives. Some separation from humans and livestock is desirable, but an area 30 feet by 30 feet will easily hold as many as eight to ten hives. However, managing honey bees is far different from raising sheep, pigs, or cattle. The latter are mammals with health issues not unlike those we experience ourselves, but honey bees are insects. To care for them and help them thrive, we must learn what is normal and healthy for honey bees and what is not. Being a beekeeper means learning an entirely different type of animal husbandry. New beekeepers should start small, with no more than two or three hives, and expand as their experience and knowledge of these interesting insects increases.

So how does one get started in beekeeping? Preparation is key. Though much information is available from books and the internet, many people benefit by learning from skilled and experienced beekeepers. Here in Kentucky, there are over forty local beekeeping associations which hold local meetings and sometimes offer beekeeping classes. In addition to classes

offered by local groups, six regional, one-day beekeeping schools are held around Kentucky starting in late January and continuing through the middle of March. These schools all offer, in addition to classroom sessions for more experienced beekeepers, a track of beginner classes for the brand new aspiring beekeeper. The goal of beginner classes is to teach prospective beekeepers enough to begin managing their own hives by April or May. For the location of the beekeeping group nearest you, the location and date of beekeeping schools, and other tips and suggestions, go to the Kentucky State Beekeepers Association: [www.ksbabeekeeping.org](http://www.ksbabeekeeping.org).

**About the Author:**

*Phil Craft was the State Apiarist of Kentucky (retired) for twelve years where he assisted Kentucky bee keepers. Since his retirement he has launched a new beekeeping Web site: <http://philcrafthivecraft.com>; E-mail: [phil@philcrafthivecraft.com](mailto:phil@philcrafthivecraft.com)*

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is that it requires only a small amount of land for the placement of hives. Some separation from humans and livestock is desirable, but an area 30 feet by 30 feet will easily hold as many as eight to ten hives. However, managing honey bees is far different from raising sheep,



*One of the nice things about beekeeping is that limited space is required for the hives. Beginning beekeepers are encouraged to start small with no more than three hives.*

Photo courtesy: Sloop Family, Buzzy Bee Apiary

# Research on North American River Otters in Kentucky: Recovery, Ecological Impacts and Population Dynamics

by M. J. Lacki and E.E. Barding

## Introduction

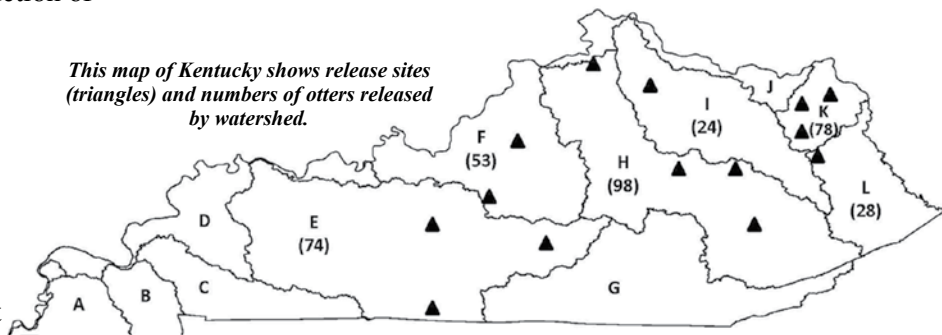
Once reduced to sparse numbers in the western end of the state, river otters (*Lontra canadensis*) are now being seen and enjoyed by Kentuckians once again as part of the wildlife fauna across the Commonwealth. Success of this species recovery is due to reintroduction of river otters by the Kentucky Department of Fish and Wildlife Resources (KDFWR) across multiple locations and years in central and eastern Kentucky (Figure 1). Otters can inhabit any body of water, including lakes, ponds, rivers, and streams. This habitat flexibility has caused the growing river otter population to come into conflict with fish hatcheries, landowners, and sportsmen concerned over the possible negative impacts on the ecology of aquatic systems and sportfish populations. To this end, the KDFWR has been working with Dr. Michael Lacki, a professor in the Department of Forestry, and Dr. Erin Barding, a recently graduated Ph.D. student at the University of Kentucky, in examining the biology and ecological impacts of river otters in Kentucky.

## Approach

We used damage reports, sign surveys, and harvest data to evaluate the distribution and status of the river otter in Kentucky. Data were gathered from annual reports submitted to KDFWR by Wildlife Control Operators, biologists, and conservation officers. We conducted bridge-crossing transect surveys from May to October over a three-year period to locate otter sign across all 12 primary watersheds in the state. Harvest data from experimental and statewide trapping seasons were gathered and provided to the project by KDFWR personnel. To assess diet, evaluate reproductive poten-

tial, and model population dynamics of river otters in Kentucky, carcasses of river otters were collected with the help of KDFWR biologists and a subset of Kentucky trappers during statewide harvest seasons. We performed necropsies (the animal equivalent of an autopsy on humans) on carcasses of river otters and removed stomach contents to identify important prey groups. We removed ovaries and reproductive

This map of Kentucky shows release sites (triangles) and numbers of otters released by watershed.



Dr. Mike Lacki

tracts from female otter carcasses and looked for evidence of successful reproduction. We developed models of population growth of river otters using Kentucky-specific pregnancy rates and litter sizes, and adult survival rates of river otters from Tennessee, Missouri, Kentucky (western end only), and West Virginia.

## Findings

We found sign of river otters during transect sampling efforts in 9 of the 12 primary watersheds in Kentucky. The three watersheds where we did not observe any sign of river otters were all in the far eastern region of the state. Relative to watershed acreage, a high abundance of otter sign was observed in the Licking, Lower Cumberland, Mississippi, Tennessee, and Tradewater River watersheds. Not surprisingly, these are also the same watersheds where harvest of otters by trappers has been most successful. The majority of nuisance complaints reported to KDFWR were depredation of fish in farm ponds and damage to boats and docks, with complaints received from all watersheds across the state. Complaints decreased dramatically, however, following the initial statewide harvest of otters in winter 2006-2007.

We examined 126 stomachs of river otters collected over three trapping seasons. Diet of



River otters can now be observed across Kentucky because of recovery efforts.

Photo courtesy: John Cox

RESEARCH IN BRIEF  
RESEARCH SUPPORTING WOODLAND OWNERS AND MANAGEMENT IN KENTUCKY

Photo courtesy: John Cox

river otters did not vary between males and females, adults and juveniles, or otters from the western and eastern halves of the state. Fish and crayfish were the main prey, occurring in 86 percent and 27 percent of stomachs containing prey items. The most frequently consumed group of fish by percent occurrence in stomachs was sportfish, including sunfish, crappies, and black bass (36%). This was followed by suckers (11%), minnows (11%), and shads (7%). Of the sportfish, sunfish and crappies occurred at a higher percent occurrence in the diet of otters than did black bass species (only 5%). The low percentage of black bass species in the diet of otters would suggest limited impact of otters on these more important sportfish. Nevertheless, further monitoring of otter predation on black bass species is needed because our samples were limited to only the winter harvest season, and we still do not know what otters eat during the summer months in Kentucky. We observed rare crayfish species in the diet of otters, including a species of concern and a state threatened species, suggesting that predation by river otters has the potential to affect populations of rare species of crayfish. Further, given that crayfish contents in many stomach samples could not be identified to the species level, it is likely that evidence of predation on rare crayfish in our study was underestimated.

We performed necropsies on a total of 170 river otters. The pregnancy rate for adult females ( $\geq 2$  years in age) was 0.72, and the average litter size equal to 3.14. There was no regional difference in reproductive rate of otters in Kentucky. Although some otters were found to be 10 years in age, the population of river otters in Kentucky currently has a very young age distribution, suggesting potential for growth in the statewide population size. The models estimated the size of the female population of Kentucky's river otters in 2010 to equal 14,670 (Tennessee inputs), 3,618 (Missouri inputs), 1,110 (LBL inputs), and 140 (West Virginia inputs), respectively.



*River otters are highly adaptable and are comfortable on land and in water. They hunt mostly at night with some of their favorite meals consisting of fish, frogs, turtles, and crayfish. River otters can dive to a depth of 60 feet and stay underwater for several minutes.*

### ***Future Implications***

Results of research to date confirm that the recovery of river otters to Kentucky is well on its way to success with evidence of otters (sign, damage reports and/or trapper success) found in all 12 major watersheds. Otters continue to be less abundant in the far eastern regions of the Cumberland Plateau and Cumberland Mountains, and it is unclear if present habitat conditions in the east are less suitable to otters. The vegetation and habitats across Kentucky have been highly altered from their original condition due to human settlement, and existing conditions likely affect reintroduced otters differently than those that were present pre-settlement. Surface mining has produced open habitats and alterations in land form that have affected shape and form of drainage basins and water quality in many areas of Kentucky. More studies are needed to determine how river otters in Kentucky select from among the habitats available to them across the landscape.

Dietary studies demonstrate that river otters in Kentucky do prey on sportfish and on some rare and threatened crayfish. Consumption of fish species such as black bass, rock bass, sunfishes, and crappies by river otters remains a management concern. Winter diets of otters suggest these carnivores may not be significantly impacting some sportfish populations, but research on summer diets of otters are needed to confirm or refute this hypothesis.

Population models predict large differences in the future abundance of river otters in Kentucky depending upon which survival rate is used in calculating population projections, and statewide Kentucky-specific survival rates are needed to improve the accuracy of model predictions. Regardless, the continued success of otter harvests indicate a healthy growing population, and the KDFWR is now evaluating modifications to the harvest schedule to increase harvest rates in portions of the state where river otters are more abundant.



*The next time you are near a water body look for river otter tracks in the wet sand or mud.*

#### ***About the Authors:***

*This research was funded by the Kentucky Department of Fish and Wildlife Resources and was conducted as a Ph.D. research project by Erin Barding, Ph.D., who is currently an assistant professor at North Georgia College and State University. The research was conducted under the direction of Dr. Mike Lacki who is a professor of Wildlife Ecology and Management at the University of Kentucky Department of Forestry.*

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Photo courtesy: John Cox

*The Log Truck*  
“SHE WILL BE COMING AROUND  
THE MOUNTAIN **WHEN**  
*The Log Truck* SHE COMES NOT **IF** *The Log Truck* SHE COMES...”

**REGARDLESS**  
WHETHER YOUR  
OBJECTIVES AS A LANDOWNER  
ARE WILDLIFE, RECREATION,  
AND/OR TIMBER...  
HARVESTING IS AN IMPORTANT  
PART OF RESPONSIBLE FOREST  
MANAGEMENT. BE PREPARED  
TO HARVEST TIMBER &  
**DO IT RIGHT!**

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# Group Certification: The key to family forest certification

by Jeff Stringer

**A**t one time, forest certification was a costly endeavor in both time and money. However, certification systems, including both the American Tree Farm System (ATFS) and the Forest Stewardship Council (FSC), recognize the importance of family-owned woodlands and have developed “group certification” to bring the cost of certification down to manageable levels or, in some cases to be free of charge.

## How Groups Work

To become certified, a woodland owner has to have a written management plan that includes the stipulations set forth in a certification system’s standards. For those of you who are Tree Farmers, through ATFS, your plans meet ATFS standards. Further, you are inspected periodically, for Tree Farmers this inspection is typically done at least once every five years. This inspection by a Tree Farm inspector is what sets you apart from woodland owners who have a Forest Stewardship Plan but are not Tree Farm members. HOWEVER, this inspection does not make your Tree Farm certified. What makes you certified is that the ATFS itself is audited by an independent third party, PricewaterhouseCoopers LLC (PwC) to ensure that the ATFS is conducting itself according to its own rules and regulations and that Tree Farmers are managing to the ATFS standards. FSC is relatively new compared to the ATFS and has not had a historic group of landowners to work with. Therefore, FSC has to have interested individual consulting foresters, forest industries, associations, or organizations to develop a group and be the “group manager.” Examples of organizations that serve as group managers are the Center for Forest and Wood Certification (CFWC) based in Kentucky which serves a

large region and the Alabama Treasure Forest Association that has formed an FSC group. Many times, as is the case with the CFWC woodland owners are certified through both ATFS and FSC. In some states, such as Wisconsin or Indiana, the state forestry agency has formed what is informally called a “super group” out of everyone in its forest tax programs.

## Certification Costs

This independent third party audit costs money. If you had to bear this cost yourself, it would easily cost between \$5,000 and \$10,000 for this independent audit team

to come to your woodlands and determine if you are upholding the standards. Groups allow costs to be distributed among a large number of members, thus keeping individual fees low. In the instance of some groups run by state agencies, industry, or the ATFS, the organizations are often bearing all of the cost of certification for the individual woodland owner.

Group membership is the path for family woodlands certification. While groups take on many forms, sizes, and organizational structures, they all do basically the same thing. They organize woodland owners and administrate all the aspects of certification to minimize the work and cost for the individual owner.

Without the group concept, certification of family-owned woodlands would be out of reach for most woodland owners. If you are interested in certification, contact your local state, industry, or consulting forester.

## About the Author:

**Jeff Stringer, Ph.D.**, is an extension professor 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.

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*Woodland owners that are interested in participating in forest certification programs should strongly consider joining a certification group. Group managers assist woodland owners in navigating certification requirements, reducing costs, and helping them see the forest through the trees.*

Photo courtesy: Doug McLaren

# Forest Health



## Invasive Plant Hit List: Japanese Honeysuckle

by Zeb Weese



Japanese honeysuckle is a woody vine that is very invasive and considered a severe threat to Kentucky's natural areas. It was first introduced into North America in 1806 from Asia.

Photos courtesy: Chuck Barger, University of Georgia, Bugwood.org Right: James H. Miller & Ted Bodner, Southern Weed Science Society, Bugwood.org

includes species which are or could become wide spread in Kentucky.” Like many invasive exotic species, Japanese honeysuckle can monopolize resources and crowd out native species from their habitat. It is indeed a severe threat to the biodiversity of Kentucky and to healthy forest regeneration in your woodland.

Japanese honeysuckle is a Southeast Asian native naturally found along roadsides and sparsely vegetated forests under 5,000 feet in elevation. It is closely related to the equally invasive bush honeysuckle (*Lonicera mackii*) and to some much less common native honeysuckles, such as the trumpet honeysuckle (*Lonicera sempervirens*). It was introduced to North America from Asia in 1806 as an ornamental and, unfortunately, it can still be found at most nurseries and garden centers. It is all too common for landscapers to prefer invasive species over their native cousins because their very invasiveness makes them easy to propagate. In the past, game biologists even promoted Japanese honeysuckle as wildlife forage and recommended its cultivation because it stays green throughout most of the year.

The invasiveness of Japanese honeysuckle is due in part to vigorous resprouting after its aboveground parts are removed, for instance following herbivory or mowing. It is a very aggressive grower and capable of growing 30 feet of vine per year in warm climates. Honeysuckle has the potential to further impact native plants through allelopa-

thy, or the production of chemical compounds which change the soil chemistry to benefit it and inhibit the growth of other plants. This effect is particularly noticeable in large infestations where honeysuckle leaves are present in the litter layer. Although it thrives in open areas such as fencerows, it is somewhat shade tolerant and does well at forest edges; it can even invade the forest interior if disturbances create openings in the canopy. Woodland owners should be aware that any Japanese honeysuckle on the edge of their woods has the very real potential to invade the woods soon after trees are harvested and thereby inhibit forest regeneration. Therefore, control of honeysuckle infestations on your property should take place prior to any timber management.

United States. The Kentucky Exotic Pest Plant Council has designated it a “severe threat,” which is defined as an “exotic plant species which possess characteristics of invasive species and spread easily into native plant communities and displace native vegetation;

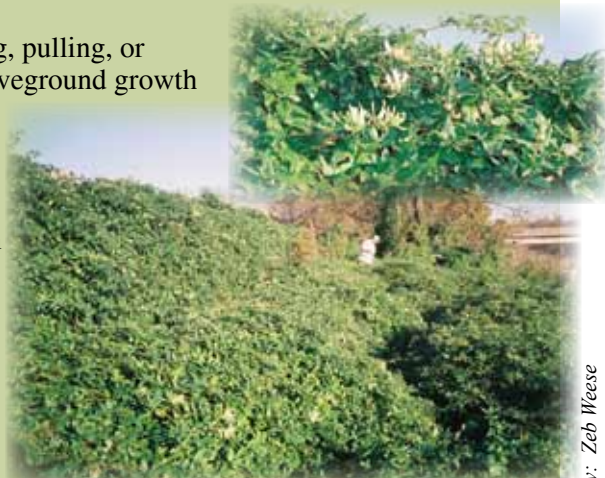
thy, or the production of chemical compounds which change the soil chemistry to benefit it and inhibit the growth of other plants. This effect is particularly noticeable in large infestations where honeysuckle leaves are present in the litter layer. Although it thrives in open areas such as fencerows, it is somewhat shade tolerant and does well at forest edges; it can even invade the forest interior if disturbances create openings in the canopy. Woodland owners should be aware that any Japanese honeysuckle on the edge of their woods has the very real potential to invade the woods soon after trees are harvested and thereby inhibit forest regeneration. Therefore, control of honeysuckle infestations on your property should take place prior to any timber management.

### Identification

Japanese honeysuckle is a woody vine which can climb or trail up to 40 feet in length. It generally forms dense mats of vine-like, opposite branches with round, slender stems rarely attaining a diameter of two inches. While the stems are brown or tan, the leaves are bright green on top with a light underside. The leaves are opposite, smooth, and usually elliptical—although they are somewhat variable in shape—and are 1.5 to 2.5 inches long and 1 to 1.5 inches wide. In Kentucky the fragrant, tubular, one-inch-long, white-to-yellow flowers may bloom at any time between April and August. Each flower may produce 2 to 3 black, round, glossy berries from late summer to early spring.

### Removal

Mowing, cutting, pulling, or burning the aboveground growth does not kill the plant and in many cases stimulates even denser regrowth the following year. For example, in one study honeysuckle mowed to the ground in February formed a dense seven-inch-tall mat within two



Left unchecked, Japanese honeysuckle can take over an area by forming dense mats that prevent native plants from establishing and surviving. Herbicides are considered the only practical control method for infestations like the one above.



*One method that Japanese honeysuckle uses to take over a site is by sending out vegetative runners. As with all invasive plants, early detection and control is much preferred to waiting until they take over an area.*

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

months, and a year and half later the mat was 20 inches high. A mat of only a few inches in height is enough to prevent the growth of native plant seedlings. Prescribed burns have proven effective in controlling many invasive species, but fire stimulates honeysuckle growth much as mowing does. Chemical control is the only practical control method, particularly for large plots. Landowners often face a dilemma in selecting herbicides for honeysuckle control – how do you control honeysuckle while protecting habitat for native plants and trees? Because Japanese honeysuckle actively grows until the temperature dips below freezing, it is possible to effectively apply herbicide to it when most native species are dormant. Because it is essentially growing year-round in Kentucky, herbicides can be applied to Japanese honeysuckle in the winter without harming other native trees and shrubs in the area; you

may even allow native seeds present in the soil to germinate. Bear in mind, to maximize herbicide effectiveness and safety, only apply herbicide on a relative dry, sunny, and windless day with temperatures over 40°F. In Kentucky, there are typically many days between November and March which meet this criteria.

The most effective Japanese honeysuckle control is through foliar herbicide application, or herbicide applied directly to the leaves. See Table 1 for information on the herbicides that can be used for control. Glyphosate-based herbicides are the most commonly used for Japanese honeysuckle control; use the label rate (usually 1 to 2 percent of active ingredient) applied with a hand-held or backpack sprayer. Herbicide application before the first killing frost is more effective than application later in the season, so application before the temperature drops below 25°F the first time of the season is recommended. However, applying herbicide any time the plant is green and actively growing will work to some extent. Other herbicides that are also effective in Japanese honeysuckle control include imazapyr-based and metsulfuron methyl-based formulations. Be aware that imazapyr-based herbicides do have quite a bit of soil activity and may not be the best choice for an area that you may wish to re-vegetate the following spring. Triclopyr-based formulations are not among the most effective for dormant season control of Japanese honeysuckle and are not recommended.

**Table 1: List of some commonly used herbicides for Japanese honeysuckle control.\***

Active Ingredient	Common Brands	Treatment	Cautions
Glyphosate	RoundUp, Accord, etc**	Foliar application any time of the year when the plant is growing - between November and February has least impact on other plants. Conditions optimally should be dry, sunny, low wind, over 40°F.	Make sure that you follow all label directions for mixing and safety.
Imazapyr	Arsenal		
Metsulfuron methyl	Escort		

\* Other herbicide brands can be used. The herbicides listed are those that have widespread and research-based used.

\*\* There are currently a large number of brand names for glyphosate herbicides. Many are for use in field or fencerows where Japanese honeysuckle is common; a few such as Accord are labeled for use inside a forest. See Kentucky Woodland Magazine 1(1) for more information.

**About the Author:**

**Zeb Weese** is the biologist consultant for the Kentucky Heritage Land Conservation Fund and is responsible for the coordination of land management activities on natural areas throughout Kentucky.

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**Advertisements:**

# Kentucky Champion Tree Program

## Our State Heritage –

## The Kentucky Coffeetree

by Diana Olszowy

Photos courtesy: Diana Olszowy

Many decades ago, it was discovered that Kentucky's legislature had never officially established a "state tree." Folks had considered the tulip poplar (a.k.a. yellow-poplar) to be Kentucky's "unofficial" state tree, as it is in the neighboring states of Tennessee and Indiana. But a different scenario was being played out by the late Joe Creason, a Louisville Courier-Journal columnist, who is credited for initiating and rallying support for making the Kentucky coffeetree the state tree. Through his efforts, the Kentucky coffeetree became the "official" state tree of Kentucky on March 8, 1976.

However, in 1994, the General Assembly changed the "official" state tree to yellow-poplar, due to its abundance and economic importance to the state. This decision did not sit well with students from Bethel Elementary School in Bath County (burial place for Joe Creason), who strove to keep the Kentucky coffeetree the state tree. These students were worthy representatives for the late Joe Creason, because through their efforts, on Arbor Day 1994, Brereton C. Jones, governor at that time, and proclaimed the Kentucky Coffeetree as the State Heritage Tree recognizing its historical significance to the Commonwealth. Speaking of worthy representatives, the state champion Kentucky coffeetree is the pride of the city of

Prospect. Nestled in the community's Putney Pond and Woodlands area, the champion measures a whopping 10 feet in circumference and stands over 100 feet in height. The 25-acre Putney Pond and Woodlands area was purchased with grant assistance from the Kentucky Heritage Land Conservation Fund and is a unique, old-growth urban forest remnant with large American beech, sugar maple, and yellow-poplar and it is now the home of a champion.

The Kentucky coffeetree is usually a medium-size tree attaining a height of 40-75 feet and a trunk circumference of 12-24 inches. Coffeetrees produce short, stubby branches, often with twisted, gnarly twig tips if growing in the open. They drop their large, bipinnate

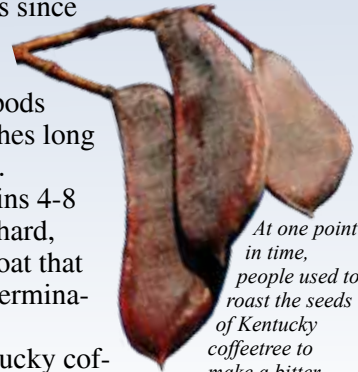
leaves (1-3 feet long), at the first sign of frost, and since new leaves don't usually appear until very late in spring (late May/early June), the tree is bare for about six months of the year. The coffeetree is a dioecious species, which means that the male and female flowers are borne on separate trees, which makes the male trees popular for ornamental plantings since they do not produce the large, heavy seedpods. The seedpods range from 6-10 inches long and 1-2 inches wide.

Each seedpod contains 4-8 seeds which have a hard, impermeable seed coat that prevents or delays germination.

The wood of Kentucky coffeetree is a strong, heavy wood used in general construction, cabinet work, sills, fine furniture, crossties, and fuel wood. The Native Americans used pulp from the wood to combat fever and headaches, and the seeds were roasted for food and served as a substitute for coffee (a very bitter coffee, but it was probably better than nothing).

A particularly interesting characteristic of the Kentucky coffeetree is that yes, it is in the legume family, but it is NOT a nitrogen fixer, like its black locust or honeylocust cousins. It has very few pests and is being pushed in the landscape industry as a substitute for ash or elm. It is a tough urban tree and has been successfully used on surface mining reclamation sites. Consider planting Kentucky coffeetree on your property, you will be rewarded with a tree with a low-maintenance, four-season appeal.

The alternate, bipinnately compound leaves of the Kentucky coffeetree are the largest of any native tree species. Kentucky coffeetrees do not have leaves on their branches for half the year.



At one point in time, people used to roast the seeds of Kentucky coffeetree to make a bitter type of coffee.



This champion Kentucky coffeetree can be found in Prospect (the city crosses the Jefferson/Oldham county line). The Kentucky coffeetree is Kentucky's State Heritage Tree.

### About the Author:

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# Test Your Knowledge



Submit your answers at [www.ukforestry.org](http://www.ukforestry.org) for a chance to Win a \$50 Gift Certificate compliments of...



*Editor's note: 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. Visit [www.ukforestry.org](http://www.ukforestry.org) to enter your answers for a chance to win a \$50 gift certificate to Forestry Suppliers. Sorry, but University of Kentucky and Kentucky Division of Forestry employees (and their family members) are ineligible to win the \$50 gift certificate.*



*Hint: See article on page 1.*

1. What is the difference between “prescribed fire” and “controlled fire”?
- There is no difference
  - Controlled fire is for woodlands only
  - Prescribed fire is for grasslands only

2. As woodland owners work with the Kentucky Department of Fish and Wildlife Resources to implement prescribed fire, who is responsible for installing the fire control lines?



*Hint: See article on page 4.*

- Private lands biologist
- Landowner
- Local fire department

3. If you have an established wild pig population on your property what is the most effective method for controlling them?



*Hint: See article on page 8.*

- Hunting
- Poisoning
- Trapping



*Hint: See article on page 15.*

4. Honey bees provide many benefits to people. Overall, which benefit do you believe is most important?

- Honey
- Beeswax
- Plant pollination



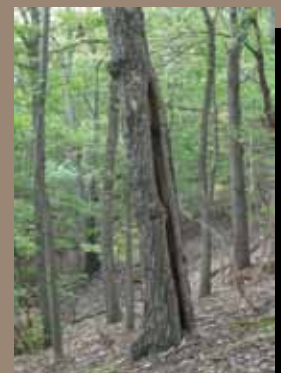
*Hint: See article on page 20.*

5. Japanese honeysuckle is a serious threat to natural areas. This exotic, invasive plant is capable of vigorous growth and can physically crowd out native plants. It can also use another strategy to inhibit native plant growth through a process known as \_\_\_\_\_?

- Inhibition
- Alleopathy
- Chemitrogy

6. We all recognize that wildfires are a serious threat that degrades timber values. The majority of this loss is attributed to \_\_\_\_\_.

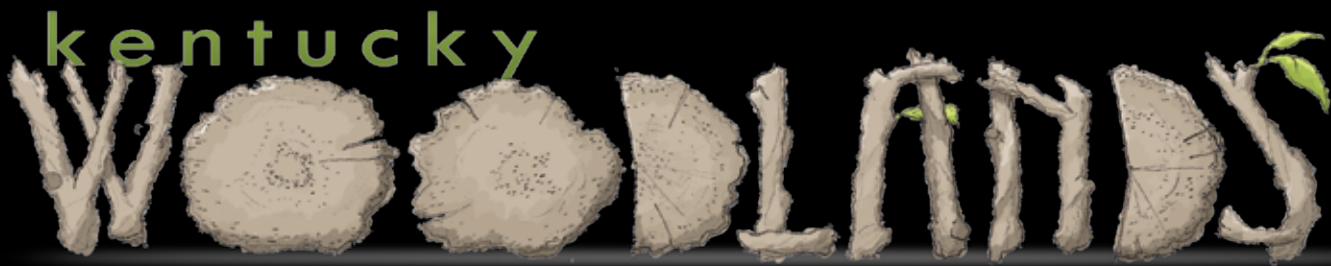
- Hear rot of damaged trees
- Change in stand structure
- Cull loss



*Hint: See article on page 6.*



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



## Be on the Lookout for Blacklegged Ticks!

The blacklegged tick (*Ixodes scapularis*), also called the deer tick, is the main vector of Lyme disease (LD) in the northeastern US. While Lyme disease is established in the northeast, few cases have been reported in southern states and LD is not considered to be endemic here. However, it is important to be aware of possible increases in populations of this tick and to report findings in Kentucky. The blacklegged tick has been found at several locations in eastern Kentucky (Clay, Jackson, Knox, and McCreary counties) over the past few years, and most recently in Lee Co. All the found ticks have been adults, which are active

from November through April.

Given the potential public health impact of the blacklegged tick, it is important to be alert for it. Do not hesitate to send any ticks in for identification. Specimens representing new county records will be forwarded to the National Veterinary Services Laboratory in Ames, IA so the information can be entered in their database. For more information contact Lee Townsend, UK Extension Entomologist, at 859.257.7455 or via e-mail [Lee.Townsend@uky.edu](mailto:Lee.Townsend@uky.edu)



*Photo courtesy: Scott Bauer, USDA Agricultural Research Service, Bugwood.org*

## Biomass BMPs Released

The Kentucky Division of Forestry (KDF) recently released recommendations for harvesting forest biomass as an alternative energy source. The document, entitled "Recommendations for the Harvesting of Woody Biomass," is available at <http://forestry.ky.gov/Pages/WoodEnergyTopics.aspx>.

Woody biomass consists of trees, branches, and other vegetation that can be used as a source of heat or power for the generation of electricity. Technology is also being developed that would allow wood to be converted into ethanol that could be used as a replacement for gasoline in motor vehicles.

Woody biomass has sparked interest from policymakers, forest industry representatives, energy analysts, and others who are looking for new sources of energy. The division's recommendations will help balance the emerging biomass industry with the need to protect our forests and ensure sustainability. KDF recommends that interested landowners seek professional forestry assistance from a qualified

natural resource professional before beginning any timber harvest. In addition, pre-harvest planning should include a written contract between the landowner and the logger to include all expectations and requirements of both parties.



*Photo courtesy: Jeff Stringer*

The recommendations were developed with assistance from key partners including the Kentucky Department for Fish and Wildlife Resources, Kentucky Division of Water, Kentucky Department of Conservation, Kentucky Nature Preserves Commission, University of Kentucky Department of Forestry, U.S. Forest Service, and U.S. Fish and Wildlife Service.

## Upcoming Dates To Remember:

Date:	Event:	Location:	Contact:
March 9, 2012	NTPF Workshop	Quicksand, KY	606.666.2438 ext. 285
March 15, 2012	Lee Co. Forestry Program	Lee Co. Extension Office	606.464.8759
March 24, 2012	Ohio River Valley Woodlands and Wildlife Workshop	Kings Island Conference Center, Cincinnati, OH	502.495.5000
March 27, 2012	One Acre and a Time: Woodland Owner Seminar	John W. Black Community Center, Oldham County	859.257.7597
April 10 - 11, 2012	KWOA Annual Meeting	Pennyrile, KY	<a href="http://kwoa.net">kwoa.net</a>
March 28 - 30, 2012	2012 Kentucky Forest Industries Association Annual Meeting	Louisville, KY at the Seelbach Hilton	<a href="http://www.kfia.org">www.kfia.org</a> 502.695.3979

For more information about these programs, visit [www.ukforestry.org](http://www.ukforestry.org)

# NEWS TO USE

## ***KDF Celebrates 100-Year Anniversary: Governor Beshear Proclaims 2012 as the Year of Kentucky's Forests***



Photo courtesy: KDF

*Fire towers were once strategically placed across Kentucky and were the primary method of detecting wildland fires. Today, small airplanes are used to detect fire during wildland fire hazard seasons allowing fewer KDF employees to scan significantly larger areas than the fire towers covered.*

The Kentucky Division of Forestry (KDF) is celebrating its 100th Anniversary. To help commemorate KDF's Centennial and to acknowledge its employees, past and present, Gov. Steve Beshear signed a proclamation declaring 2012 year as The Year of Kentucky's Forests. KDF, originally known as the Board of Forestry, was established in 1912 by the Kentucky General Assembly to protect forest resources from being destroyed by wildfire and depleted from over-harvesting. Although KDF has changed considerably over the years, the initial priorities have remained the same: protecting forests from wildfire, assisting landowners with forest stewardship and producing tree seedlings for reforestation projects. "This is a significant milestone for our agency and for forest conservation in our state," said Leah MacSwords, director of KDF. "A century of hard work and dedication by the division employees has helped sustain our forest resources

for a multitude of benefits including scenic beauty, clean air and water, wildlife habitat and an economically-important forest industry." KDF's yearlong celebration of its centennial will include a salutation during the State Arbor Day Ceremony, informational displays at the capitol, participation in fairs and festivals across the Commonwealth and historical presentations to various groups throughout the year. The next issue of Kentucky Woodlands Magazine will feature an article on the Kentucky Forestry Centennial. For more information and to learn more about the division's past, present and future, please visit <http://forestry.ky.gov>



## ***KY Prescribed Fire Council***

The mission of the Kentucky Prescribed Fire Council is to promote the understanding and enhance collaboration for the use of ecologically based prescribed fire in the Commonwealth of Kentucky. The council is concerned about the safe and beneficial use of prescribed fire as a land management tool. This fall the Kentucky Prescribed Fire Council will be conducting a workshop for landowners interested in learning more about utilizing controlled burns as a habitat management tool on their properties. This workshop is being planned for late-August or early-September 2012. Check out the Kentucky Prescribed Fire Council website to learn more at [www.ca.uky.edu/forestry/fire/](http://www.ca.uky.edu/forestry/fire/).



### **Test Your Knowledge Answers from KWM Vol. 6 Issue 2**

1. c) **Congratulations to C. Keller of Bullitt Co. He was randomly chosen from the entries with the correct responses from the last quiz. Thank you Kentucky Woodland Owners Association for donating \$50 gift certificates for**
2. d)
3. b)
4. a)
5. a) **Test Your Knowledge for the 2011 issues!**

Visit [www.ukforestry.org](http://www.ukforestry.org) to submit your answers to this issues quiz for a chance to win a \$50 gift certificate to Forestry Suppliers. The answers to this issue's questions will be provided in the next issue of the magazine.



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Photo courtesy: Chris Minor

## Wildland Fires' Long-Term Costs to Kentucky's Woodlands Honey bees

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