12-1-2013

Update Newsletter December 2013

Department of Forestry, Wildlife and Fisheries

Follow this and additional works at: http://trace.tennessee.edu/utk_updatenews

Recommended Citation
http://trace.tennessee.edu/utk_updatenews/27

This Newsletter is brought to you for free and open access by the Forestry, Wildlife, and Fisheries at Trace: Tennessee Research and Creative Exchange. It has been accepted for inclusion in Monthly Extension Update Newsletter by an authorized administrator of Trace: Tennessee Research and Creative Exchange. For more information, please contact trace@utk.edu.
Ag Leaders Develop Strategic Plan to Increase TN Agriculture and Forestry For The Next Decade

Tennessee’s top agricultural leaders announced a 10-year strategic plan to increase agriculture and forestry in the state by building production capacity and incentivizing the private sector. The plan, which has been a year in the making, was developed following a challenge by Gov. Bill Haslam a year ago to make Tennessee the No. 1 state in the Southeast in the growth and development of agriculture and forestry.

“Every farm is a small business, and we need to remember that,” Agriculture Commissioner Julius Johnson said. “We enjoy the aesthetics of our farms and often forget that there is a business ongoing here that has to turn a profit every year to continue to exist as a farm.”

The plan highlights 27 action steps which focus on building production capacity and incentivizing the private sector through four major recommendations:

- Advance agriculture, natural resources and rural infrastructure as Tennessee business priorities.
- Ensure a positive and predictable regulatory and policy environment for Tennessee agriculture and natural resources.
- Expand marketing opportunities for Tennessee producers and encourage new production systems and agribusinesses.
- Increase the scope and depth of a skilled and educated workforce through career, technical and higher education.

Tennessee Farm Bureau president Lacy Upchurch, UT Institute of Agriculture Chancellor Larry Arrington and Johnson presented the plan to the governor at the Tennessee Farm Bureau Federation’s annual meeting held this week in Franklin, Tenn.

The three leaders guided the development of the plan with the help of a steering committee of 28 Tennessee farmers, business leaders and commodity representatives.

“The governor will be proud of what we’ve done in agriculture,” Upchurch said. “Working together, we can make agriculture stronger and rural communities and farms more successful, resulting in complete economic development in Tennessee.”
Haslam last year asked the group to help develop a 10-year plan that was “practical, affordable and actionable.” State agriculture leaders say the plan focuses less on public funding and more on how to incentivize private sector investment, innovation and entrepreneurship.

“Agriculture and forestry is a $66 billion industry and accounts for 10 percent of state employment,” Arrington said. “We’re stepping out and making a statement about the importance of agriculture, natural resources and rural Tennessee to the future of this state.”

The plan also endorses Gov. Haslam’s “Drive to 55” initiative, which calls for more than half the state’s population to earn a post-secondary degree or certificate by 2025. Industry leaders say having a more educated population will help our rural economies as jobs in agriculture become more skill-based and high-tech.

To view the complete plan, visit the Tennessee Department of Agriculture’s website at www.tn.gov/agriculture/ruralchallenge

**Hardwood “Check-off” Proposed**

*Adam Taylor, Associate Professor, Forest Products*

“Beef: It’s what’s for dinner” and “Got milk?” are familiar phrases to most of us. In the future, catchy phrases promoting hardwood products might be just as well known.

The United States Department of Agriculture has published a proposal for a *Hardwood Lumber and Hardwood Plywood Promotion, Research and Information Order*. This proposal would establish a ‘check-off’ program for hardwood products similar to existing programs for dairy, beef, and softwood lumber commodities. In these programs, money is collected from producers and used to fund advertising and research activities that benefit the industry as a whole. The familiar tag lines shown above are examples of some of the promotion efforts resulting from such programs.

The hardwood proposal is open for comment until January 13, 2014. After that, the proposal may be revised and then the hardwood producers themselves will have the opportunity to vote. If the proposal is accepted as it is now, it would establish a $1 per $1,000 in sales levy on hardwood lumber producers (with different fees for other producers in the hardwood industry). All producers with sales over $2 million/year would be required to pay. The money collected – estimated at about $10 million per year – would be allocated to research and promotion programs by a board made up of industry members.

Not surprisingly, this proposal has stimulated strong responses – both in favor and against. Supporters point to the experience of similar programs for other commodities and view the fragmented hardwood industry as the ideal candidate for similar success: they argue that only by pooling their efforts can they achieve ‘critical mass’ for effective promotion. Some proponents argue that this program would be more fair than the current situation, where some companies fund promotion efforts that can indirectly benefit other producers that don’t pay. On the other hand, some opponents see it simply as a government tax that won’t benefit their business. Others are skeptical of a program that includes such diverse products as hardwood plywood (highly processed products with high value and potentially global markets) and pallet lumber (low value with local markets). Still others worry that this program would reduce support for current promotion programs run through voluntary industry associations.

The full proposal, and instructions for how to comment, is listed here:


At the moment, it is unknown whether this ‘hardwood check-off’ proposal will be changed and/or passed. If it does pass, it will join a growing number of programs designed to promote a commodity in general, rather than a particular brand. But whether promoted through a check-off program or otherwise, American hardwoods have many merits to publicize, including: quality, legality and sustainability.
Dr. Craig Harper Named Al Brothers Professional Deer Manager of the Year

Dr. Craig Harper, professor and Extension Wildlife Specialist at the University of Tennessee, has been named QDMA’s Al Brothers Professional Deer Manager of the Year.

“You will find no one more passionate on the subject or that enjoys helping people more than this man,” said Joe Hamilton, QDMA founder and Director of Development, who presented the award to Craig (above, left) at QDMA’s 2013 National Convention. “We use his dedication, knowledge and enthusiasm on a regular basis as we ask him to speak at our National Convention, Deer Steward courses and Branch educational events each year. Craig is also a regular contributor to Quality Whitetails, and he has helped QDMA in editing books and writing book chapters, without payment. “

This award goes to a deserving professional deer manager who has a longstanding record of service and/or contributions to QDM, the QDMA and/or the whitetail resource. Recipients have significant on-the-ground experience and a history of sharing this expertise through seminars, articles, field days and other mediums. Recipients have made a significant, identifiable impact on deer and deer hunting through education, research or management on public or private lands.

A 10th generation North Carolinian, Craig received his Ph.D. in Forest Resources from Clemson University with Dr. David Guynn as his major professor. In his job as a professor and Extension Wildlife Specialist at the University of Tennessee, Craig provides science-based information on wildlife ecology and management to natural resources professionals and landowners across Tennessee and beyond.

Craig specializes in managing habitat for white-tailed deer and has written hundreds of publications on the subject, including two books that are used as reference materials by several state wildlife agencies. He is a certified wildlife biologist, prescribed fire manager and Life Member of QDMA.

This award is named in honor of Al Brothers of Texas, author of the book Producing Quality Whitetails, who is considered the Father of Quality Deer Management.
The U.S. Forest Service now offers access to a variety of visitor maps for people using Android and iOS devices.

"This mobile app makes it easier than ever to plan your visit to a national forest or grassland," said U.S. Forest Service Chief Tom Tidwell. "By putting important forest information right at your fingertips, it will encourage more Americans to get outside and explore their forests."

The digital maps are part of USDA's work toward reaching President Obama's initiative to create a paperless government that also provides the American public with better, more accessible information. Online customer surveys also indicated a desire for more online products and information, such as maps. The Forest Service is currently working on the first phase of a website redesign, expected to debut early in 2014, which centers on a map-based tool for planning trips onto our nation's forests, grasslands and other special places.

The PDF Maps Mobile App, developed by Avenza Systems Inc., is available as a free download from iTunes and the Android Play Store. The app provides access to Forest Service maps, such as motor-vehicle-use maps, which are free while pages from national forest atlases are 99 cents and forest visitor maps are $4.99. Prices are pending for other agency maps.

The maps are geo-referenced with the user's location appearing as a blue dot. The app works on iPhones (3GS or newer) and iPads with WiFi+3G. It also works with Android 4 or newer operating systems on devices with at least 1 gigabyte of memory.

Through the app, users can purchase and download professionally created maps that are stored on their devices. They can use the maps based on their location when GPS is available. The maps also will allow users to measure distance and area, find coordinates, open a current view in Google maps, plot place marks, add notes, enter their own data and add photos as attributes. Almost 700 Forest Service maps are available through the app.

In areas of national forests and grasslands where Internet connections are unavailable, the app and static maps work well if users download the maps prior to their visit. The apps and maps also will be useful for wildland firefighters.

In geographic areas with internet availability users will be able to use the products with live data. The interactive map is expected to be available on a limited basis starting in March 2014. The Forest Service's seven regions are tasked with uploading maps. Users should contact the regional office where a forest or grassland is located if maps are not available on the app. Paper maps are still available for purchase online at the National Forest Store.
Causes of Forest Herbicide Failure

David Mercker, Extension Specialist, Forestry

Private landowners and forest contractors regularly use herbicides to accomplish silvicultural objectives, including site preparation, seedling and sapling release, thinning, and cull tree removal. The result of herbicide applications is normally satisfactory, provided the manufacturers’ directions are properly followed. Sometimes, however, the results are disappointing, even with experienced applicators.

There are a number of explanations why herbicides sometimes fail to perform as intended, and they are summarized here:

1. **Soil Texture** – herbicides act more slowly on finely textures soils (clay) than on coarse soils (sand). Often it is necessary to slightly increase application rate on finely textured soils and soils with high mineral and organic matter, and slightly lower the application rate on coarse (sandy) soils.

2. **pH of the Water** – efficacy of herbicides can vary according to the pH of the water. Study the label to determine the most favorable pH range. Don’t use surface water for mixing herbicides.

3. **Air temperature** – many herbicides will perform better with warmer air temperatures. Normally during cool or even cloudy weather, plants are not actively growing. Herbicides will not translocate readily and favorable results will be slow, if at all.

4. **Photo Decomposition** – excessive sunshine in the absence of rainfall can cause some herbicides to function poorly. Soil incorporation may be necessary (follow the label to see if this is recommended).

5. **Sap Flow** – when applying herbicides to the girdles or frills of certain trees (for instance maple) in early spring, sap flow can be so aggressive that herbicides are immediately “pushed” back out, never to reach the roots.

6. **Salt Form** – how well herbicide enters a plant is often dictated by the salt form. For instance, 2,4-D ester is more volatile than the amine salt and can move off target more readily.

7. **Precipitation** – whether in excess or too sparse, precipitation is a major factor in success with herbicides and one that the applicator has no control (other than in timing of application).

8. **Improper application** – poor site preparation, improper mixing, faulty spray equipment, variation in ground speed, etc. all contribute to inconsistency or failure.

Forest landowners that are inexperienced with herbicide application should first seek professional assistance, starting with the local County Extension Office or State Forestry Agency. Be sure to read and follow closely the label on the product to reduce the likelihood of failure. Some herbicides require specific additive and precautions. Remember too that restricted use herbicides applied commercially require a pesticide applicator’s license.

Contact your University of Tennessee County Extension Office at https://utextension.tennessee.edu/Pages/offices.aspx.

Contact TN Division of Forestry at http://www.tn.gov/agriculture/forestry/directory.shtml.
Trusting a Trust
Larry Tankersley, Extension Specialist, Forestry

Trusts are legal instruments dating to Roman times and used in English common law to manage the affairs of landowners while they were away fighting for the emperor or king. A trust is a fiduciary relationship, which basically means that a trustee or other person has a legal duty to act according to your wishes on behalf of your beneficiaries. The trustee holds legal title to the designated property.

A trust is created through a carefully crafted legal document, variously called the trust instrument or agreement. This document is very important as it states explicitly the purpose of the trust, the property subject to the agreement, the trustee(s), and the beneficiaries.

One reason for setting up a trust would be to set aside property in order to benefit certain specific individuals or charities. When a trust is established and managed according to Tennessee’s legal system, it will protect the contents of the trust from your creditors or from disgruntled beneficiaries.

One of the benefits of placing property in a trust is that it no longer belongs to you. It belongs to the trust and therefore income generated from the property is treated differently for tax purposes. This can be complicated because of the mixing of income, gift and estate tax rules. Tax savings can be considerable and are a major reason for placing assets such as timberland in a trust, but it must be thoughtfully done.

A trust allows you to “rule from the grave” to a greater extent than you could if you just passed the land to your heirs under the assumption they would follow your wishes. Since the trust owns the property, the beneficiaries and the trust are legally bound to your wishes according to the trust agreement.

In timberland trusts, it is typical to find some timber harvesting or other income-generating uses of the land unless other provisions for covering ownership and management costs were written into the agreement. Trusts generally can’t last forever unless they are established to benefit a public charity or set up as an “in perpetuity” conservation easement. Trust established to help family members, especially grandchildren, require that directions for disposition of the property at the termination of the trust are included in the trusts’ document.

“Estate Planning in Tennessee” by Anne M. McKinney and John T. Berteau is an interesting book on this subject. It’s easy to read and very thought provoking for those of us considering how to pass our timberland on to the next generation.

Always consult an attorney before making any decisions about a trust. Because trusts can be complicated, choose an attorney who is well versed in both Tennessee laws and the applicable federal trust tax and inheritance laws.

For more information about land protection and preservation tools go to the following website:

Recycling Your Christmas Tree
Wayne Clatterbuck, Professor, Silviculture and Forest Management

What will you do with your Christmas tree after the holidays? Don’t just put it out to the curb for garbage pickup. Recycle it! Most communities have a program to recycle Christmas trees. Check with your local department of public works for information.

Christmas trees are biodegradable. Often the trunks and branches are chipped for mulch used in landscaping, gardens, and on trails. The mulch provides a hospitable environment for the roots of plants and helps to control weeds. The mulch also decomposes into organic matter that plants need to thrive.

Christmas trees make effective soil erosion barriers along streams and rivers. These trees also provide excellent habitat, refuge and feeding areas for fish in ponds and waterways.

Before recycling, Christmas trees can be used to make bird feeders, adding color and excitement to the winter garden. Utilize orange slices, peanut butter, suet and seed to attract birds. They will come for the food and stay for the shelter in the branches.

Christmas trees can have many more uses than just for decoration during the holiday season. Look into recycling your tree in your community instead of allowing it to take landfill space.

Check this US Fish and Wildlife Service website for more ideas to use your tree for backyard wildlife.

Brown Needles on Eastern White Pine
Wayne Clatterbuck, Professor, Silviculture and Forest Management

During the late fall and early winter, we receive numerous inquiries about brown needles on eastern white pine trees. The browning of needles is a common and natural occurrence. If you look closely, the brown needles occur just inside the branch tips on the previous year’s growth, not the current year’s growth. Needles are retained on white pines for two years before they are shed. The needles turning brown are the two-year needles. The dead needles will continue to be shed and will accumulate on the ground throughout the winter before the new growth begins in the spring.

Pines will also have a lighter, dull-green to yellowish color during the winter months. The metabolic processes in pines, such as photosynthesis are not as active as during the summer. Generally the lower temperatures in winter retard and sometimes cease photosynthesis, although some does occur when temperature and moisture conditions are favorable. The green color of the needles is maintained somewhat during the winter, but the dark green color typical of active growing conditions in summer does not carry over to the winter.
Mixtures of pines and hardwoods often occur on forested areas in Tennessee that are not intensively managed. These stands are generally found on the marginal sites of (1) partial harvests or cutover areas with a blend of residual trees and regeneration sources (seeds, sprouts and established seedlings and saplings or (2) where site preparation (mechanical, chemical or fire), or the lack thereof, after a regeneration harvest did not completely favor either pure hardwood or pine stands. Exposure of mineral soil is required for pine seed to germinate and survive. Mixed stands also develop naturally as a transition between early successional (pioneer) pine stands and later successional hardwood species.

The benefits of pine-hardwood mixtures are attractive to many landowners. Accepting mixed stands is often less costly than establishing pure stands, i.e., lower intensity to control competing vegetation. Mixed stands offer a greater range of microenvironments that support a wider variety of wildlife species. Diversity among tree species reduces the risk of disease and insect problems in the forest. Pure stands are more conducive to insect and disease epidemics. A few examples include the southern pine beetle (pure pine), gypsy moth (oak-hickory), and oak decline (oak). Pine-hardwood stands also will produce a greater variety of forest products. Future demand for a particular type of wood is difficult to predict. A mixture of species and forest products allows a more diversified investment portfolio. In mixed stands, a two-stage harvest approach is conducive with the shorter-lived and faster-growing pines being harvested first, leaving the slower growing hardwoods for future harvests.

A problem with mixed stands is that the composition and structure will change over time in response to environmental and management changes. Mixed stands are transitional during the succession of pine to hardwoods. The long-term maintenance of pine-hardwood forests is problematic at best. Pines are short-lived trees that require full sunlight for survival. Thus, pines will not regenerate and grow in the shade of overstory hardwoods. Large overstory gaps are needed for pines to regenerate, develop and survive.

Pine-hardwood mixtures can be easily established. Before planting, a prescribed summer burn is used to prepare the site. Then plant pine at wide spacing (100-150/acre) during the winter. The fire temporarily delays the growth of the hardwood sprouts and allows the pine to make rapid early growth. As the hardwood sprouts regain their vigor, the site quickly becomes a pine-hardwood stand.

With more than 70 percent of the forested land in Tennessee being on mediocre to low productivity (marginal) sites, pine-hardwood mixtures are a significant opportunity to increase productivity (volume growth), income, diversity and other amenities of the forest in both the short and long term. Pine-hardwood mixtures are not for everyone. Remember that these mixtures are not permanent and relatively short-lived. However, landowners often overlook the potential of such stands. Lower cost, increased productivity and greater diversity make mixed pine-hardwood stands worthy of consideration.
Keys to Successful Native Grass Establishment

Successful establishment of native grasses requires attention to detail. Put another way, you will need to practice good basic agronomic principles when you plant native grasses. Advanced competition control, quality seedbeds, proper planting depths, and good follow-up weed control are all important and should be attended to carefully. Let’s consider each of these in turn.

Advanced competition control is important in establishing any perennial forage crop and natives are no exception. Cool-season perennials should be controlled during the fall and warm-season perennials in August – September before planting is planned. Winter annuals are rarely a problem but summer annuals can be very troublesome. Because of the limited options for annual weed control, advanced weed control is critical. Killing the first flush of summer annual grasses (goosegrass, crabgrass, seedling johnsongrass, etc.) prior to planting can reduce competition from these species.

Seedbed preparation: Either no-till or conventional seedbeds can be used for native grass establishment. Regardless of which you choose, it is critical to prepare a fine, clean, and firm seedbed because of the small seed size of these grasses. Coarse textured, loose seedbeds or those with a good deal of thatch or other debris will lead to poor establishment success.

Planting depth: Switchgrass, indiangrass and the bluestems all require shallow seeding depths, about 1/8-1/4 inches deep. When walking behind the drill, you should be able to see some seed on the surface within the rows – perhaps 10-15% of the length of a row. Eastern gamagrass has much larger seed and should be planted at about ¾-1 inch deep.

Follow-up weed control: Native grasses are typically slow to germinate and will not emerge for 2-4 weeks after an adequate rain. During this time, even with good advanced weed control, competition can become established and prevent your stand from being successful. Use of a pre-emergence material (1 – 1.5 oz a.i. of imazapic) on indiangrass and the bluestems should follow drilling as soon as possible. There are no labeled products that can be used effectively with switchgrass or eastern gamagrass, which is why advanced weed control is so critical.

You can still provide some relief from competition with a rotary mower or even by taking a hay cutting. The key to either method is ensuring cutting height remains above small (<10”) seedlings and minimizes the amount of leaf area removed on larger (12 – 18”) seedlings. As long as the native grass seedlings remain above the weed canopy, they will continue to grow. It is critical though, that you DO NOT allow a weed canopy to overtop the seedlings.

By following these guidelines, you should be able to provide yourself with a highly drought-tolerant stand of perennial summer forage that can last for many years with proper management. For more information see Establishing Native Warm-season Grasses for Livestock Forage in the Mid-South, SP731-B, at https://utextension.tennessee.edu/publications/Documents/SP731-B.pdf

Visit the Center for Native Grasslands Management website at http://nativegrasses.utk.edu/.
Wildlife Management Calendar for January

Craig Harper, Professor, Wildlife Management

Wildlife Notes

White-tailed deer bucks begin to shed antlers
Bald eagles begin nesting
Great horned owls begin nesting
Red-tailed hawks are paired-up and looking for nest sites
Mourning doves are pairing up
Gray squirrels begin mating
Waterfowl numbers may peak in January, according to the weather

Habitat Management

Do not mow old-fields if you have any interest in wildlife
- mowing at this time destroys much needed winter cover
- mowing accumulates thatch, limits mobility, and suppresses the seedbank
- wait until late March/early April and burn and/or disk the field
- if you just can’t burn or disk, at least wait until early April (just prior to nesting seasons) before mowing
- burning or diskng are preferable strategies for setting back succession and maintaining old-field early successional areas
- refer to Chapter 6 in Native Warm-Season Grasses: Identification, Establishment, and Management for Wildlife and Forage Production in the Mid-South, PB 1752 for additional information on managing early successional habitat for wildlife

Portions of old-fields may be burned or disked in January, but it is best if you wait until late winter/early spring if possible
- setting back succession later in the season (March) will allow winter cover to stand through the season
- burning / disking now, however, may be necessary if considerable acreage needs disturbance, but may be difficult pending wet weather
- do not burn / disk all available cover in one year—leave at least two-thirds so that you manage approximately one-third available cover each year

It is not too early to conduct dormant-season burning in woods (hardwoods and pines) to reduce fuel loads and enhance conditions for wildlife; when the weather is right, get it done; this is especially important if you have a considerable amount of acreage to burn; if you wait until March/early April, you may not get it all done, depending on weather
- obtain permit from Tennessee Division of Forestry
- make sure firebreaks are in place
- only burn when duff layer (below leaf litter) is moist (not usually a problem in January)
- remove woody debris from around the base of desirable trees to avoid damaging the tree
- primarily use a backing fire with relatively low flame heights (6 – 8 inches) to avoid damaging trees
Enhance the cover around old-fields by thinning (killing) undesirable trees 100 feet into the woods (edge feathering)
- girdle unwanted trees and spray wound with a mixture of Garlon and Arsenal AC
- use a 20% solution of Arsenal (imazapyr) or a 50% solution of Garlon 3-A (triclopyr) with water
- dead standing trees (snags) provide perching, roosting, denning, and feeding sites for many wildlife species
- increased groundcover is stimulated by the additional sunlight, improving forage and nesting cover for many wildlife species

Native warm-season grasses can be planted during the dormant season
- don’t plant too deep – no more than ¼ inch!
- don’t forget preemergence weed control next April
- refer to Chapter 5 of *Native Warm-Season Grasses: Identification, Establishment, and Management for Wildlife and Forage Production in the Mid-South*, PB 1752 for additional information

Continue to strip-mow or silage-chop dove fields to provide seed
- don’t cut it all – leave some for late winter
- migrating doves appreciate your efforts and the late dove seasons can offer great shooting

Spray perennial forage food plots for weed control if necessary
- refer to *A Guide to Successful Food Plots: Blending Science with Common Sense*, PB 1769, for specific information

Fertilize winter forage plots containing oats, wheat, and/or cereal rye to improve growth and nutritional content
- 30 pounds of N per acre
- P and K according to soil test

Soil test now for spring plots
- applications of lime require about 6 months before full effect on pH is realized

Plant trees/shrubs for wildlife
- plant trees/shrubs in blocks at end of fields and in “odd” areas
- apple, pear, crabapple, wild plum, sumac, persimmon, mulberry, and elderberry are good choices
- refer to *Improving Your Backyard Wildlife Habitat*, PB 1633, for a list of other trees and shrubs to consider

Establish hedgerows across fields with soft-mast-bearing trees and shrubs
- hedgerows can be used to break up fields into sections
- hedgerows should be at least 50 feet wide—a single row of planted shrubs/trees with at least 25 feet of fallow growth of blackberry, forbs, etc. on either side
- spray tall fescue and other undesirable grasses before planting!

Fertilize/prune trees/shrubs for increased soft mast production
- this is for trees/shrubs out in the open, not those in woods
- fertilizing oaks in woods is a waste of time and money; to increase mast potential for trees in the woods, refer to TSI activities
Continue Timber Stand Improvement activities
- stimulate growth among oaks, beech, cherry, persimmon, blackgum, and other mast producers by killing surrounding competitors
- girdle unwanted trees and spray wound with appropriate herbicide
- use a 20% solution of Arsenal (imazapyr) or a 50% solution of Garlon 3-A (triclopyr) with water

Spray Chinese privet and Japanese honeysuckle
- spraying the green foliage of these species now prevents harming dormant desirable species
- 5% solution of Garlon 3-A or 1% solution of glyphosate herbicide and water works well for honeysuckle
- 3% solution of glyphosate herbicide works well for privet

Build brushpiles from thinned trees and pruned limbs
- put large limbs on bottom and small limbs on top for crevice space and overhead protection
- this is best done and the effect greatest along the edges of and within good early successional cover (native forbs and grasses with scattered brambles and shrubs)

Erect boxes for wood ducks and bluebirds
- 1 box per 100 yards of shoreline is adequate for wood ducks
- clean-out old wood duck boxes and replenish fresh wood shavings (about 4 – 6 inches)
- screech owls and squirrels may use the boxes through winter
- repair/install predator shields if necessary
- bluebird boxes should be no closer than 80 yards apart
- up to 9 or more bluebirds may roost in a single box on cold nights

Keep bird feeders full
- black-oil sunflowers are a favorite of many birds
- thistle seed is preferred by goldfinches
- suet provides energy for lots of birds during winter
- refer to Improving Your Backyard Wildlife Habitat, PB 1633, for information on specific feeders and seed for birds

Wildlife Damage/Population Management

Close crawl spaces under the house and check for openings in the attic
- helps keep snakes, skunks, and squirrels from getting into places where they are not welcome
- rodents are beginning to cache food for the coming winter; take action now to keep them out of your house
- glueboards are very effective in trapping mice, snakes, and lizards looking for a warm place inside your basement or garage
Blackbirds and starlings have gathered into large winter flocks
   - don’t allow them to roost in your trees; if they start, they’ll form a habit
   - repel them with noise makers (shotguns, firecrackers, banging metal pans together)
   - be persistent

Vultures may be problematic around structures and livestock holding areas
   - scare tactics using firearms and pyrotechnics are effective—persistence is necessary
   - it is against the law to shoot a vulture
   - contact USDA-Wildlife Services for severe problems

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

“I love Christmas trees! Yummmmy!”
“... I can eat young trees down to a pencil-sized stem.”
May this be a season of great Joy,

A time to show love for all.
A time to remember each other with fondness.

A time of contemplation.
A time of healing and renewed strength.

A time of excitement as we look toward the future.
A time to share our desires and wishes with each other.

A time to receive and to give great joy and complete peace
To every part of our lives.

May you make the time to receive and to give this most precious gift of Joy and Peace.

May the next year bring you seasons of great Joy
Every day, in every way, all year long.

It is with great JOY, that we serve one another.

Happy, Happy Holidays to you and your family
EXTENSION FACULTY AND STATE SPECIALISTS

Dr. Keith L. Belli, Professor and Department Head
865-974-7346, kbelli@utk.edu

Dr. Wayne K. Clatterbuck, Professor, Silviculture & Forest Management
865-974-7990, wclatterbuck@utk.edu

Dr. Craig A. Harper, Professor, Wildlife Management
865-974-7346, charper@utk.edu

Dr. Patrick D. Keyser, Professor, Native Grasslands Management
865-974-0644, pkeyser@utk.edu

Dr. Adam Taylor, Associate Professor, Forest Products
865-946-1125, mtaylo29@utk.edu

Dr. David C. Mercker, Extension Specialist, Forestry Specialist
731-425-4703, dcmcker@utk.edu

Mr. Larry A. Tankersley, Extension Associate, Forestry Specialist
865-974-7977, ltanker1@utk.edu

Extension Associate in Wildlife — Vacant
Fisheries Specialist — Vacant

FISHERIES FIRST RESPONDERS

East Tennessee Region
Mr. Kelly Amonett, Morgan County
423-346-3000, damonet1@tennessee.edu

Middle Tennessee Region
Mr. Creig Kimbro, Grundy County
931-592-3971, ckimbro@tennessee.edu

West Tennessee Region
Mr. Ron Blair, Henderson County
731-968-5266, rblair3@tennessee.edu

EXTENSION PROFESSIONAL STAFF

Mrs. Mirian Wright, Administrative Assistant
865-974-7346, mwright@utk.edu