UT Extension

FWF Update Newsletter

Department of Forestry, Wildlife and Fisheries *August 2008*

Dr. Keith Belli, Department Head *Website: http://fwf.ag.utk.edu*

In This Issue

WILDLIFE FOOD PLOTS MANUAL NOW AVAILABLE

A Guide to Successful Wildlife Food Plots: Blending Science with Common Sense has been printed and copies are available. You may view and download the manual on the UT Extension website at http://utextension.tennessee.edu/publications/wildlife/default.asp. A hard copy may also be purchased at the same website for a cost of $20 per copy.

TRI-STATE QUAIL WORKSHOPS PLANNED

Spend three days with some of the top quail researchers and land managers in the country. If you are a landowner or manager interested in learning all you can about bobwhite quail, here is your opportunity.

Three, intensive bobwhite quail management workshops have been planned in Tennessee, Mississippi and Alabama. The first of these is scheduled for October 1-3, 2008 at the Manchester/Coffee County Conference Center in Manchester, Tenn. The workshop will consist of indoor presentations, evening "shoot from the hip" sessions and socials, and a field trip to a local private farm that has successfully incorporated many types of land management practices to benefit quail.

Noted quail researchers and managers from the Southeast will cover a broad array of subjects related to bobwhite management, including management practices for cropland, pasture, and woodlands; establishment and management of native grasses and forbs; plant identification; use of herbicides; predator control; using pen-reared quail; supplemental feeding, and much more.

The workshop is limited to 50 participants, so it is urged that interested persons reserve a spot soon. The cost for the workshop is $425 per person, which includes all meals, workshop materials, and field trip transportation. To register for the workshop or for more information, contact Mirian Wright at UT Extension, (865) 974-7346 or mwright@utk.edu. The workshop agenda can be viewed on the UT Extension website at

http://fwf.ag.utk.edu/Announcements/Tri-state%20quail%20workshop%20flyer.pdf

by Craig Harper, Professor, Wildlife Management

HABITAT MANAGEMENT

Prepare new cool-season plots for fall planting
- spray existing sod with glyphosate herbicide (such as Roundup—2 quarts/acre)
- amend soil according to soil test recommendations
- incorporate (disk or plow) lime and fertilizer into root zone of plot

Plant cool-season food plots
- use preemergence herbicides for best results
- see *Growing and Managing Successful Food Plots for Wildlife in the Mid-South*, PB 1743, for additional information on seeding rates and management recommendations

Mow and spray perennial forage food plots for weed control if necessary
- see *Growing and Managing Successful Food Plots for Wildlife in the Mid-South*, PB 1743, for herbicide recommendations

Strip-mow or silage chop dove fields to provide seed and hunting opportunities
- see *Growing and Managing Successful Food Plots for Wildlife in the Mid-South*, PB 1743, for management strategies for dove fields
- take a kid dove hunting

Top-sow winter wheat on freshly disked prepared seedbed to attract doves and provide forage for deer, turkeys, and other wildlife through fall and winter

DO NOT mow old-fields at this time of year if you are interested in wildlife using them!
- destroys cover for wildlife at a time it is needed most (nesting and raising young)
- stimulates grass and leads to reduced forb cover (which means less food and cover)
- increases thatch at ground level and makes travel through the field much more difficult for wildlife
- manage and maintain old-fields by burning or disking in late March/early April or September/October; **don't mow them**!
- see *Old-Field Management* for additional information on managing old-fields specifically for white-tailed deer

Burn old-fields to reduce woody encroachment by sweetgum, elms, and other undesirable woody saplings in the field
- don't be afraid to burn; prepare adequate firebreaks by disking around the perimeter of the field and burn against the wind
- Smokey Bear lied – burning is **much** more wildlife friendly than mowing!
- refer to chapter 6 in *Native Warm-Season Grasses: Identification, Establishment, and Management*, PB 1752 for additional information on burning fields and other management strategies

Burn old-fields to stimulate forbs and reduce grass dominance where native warm-season grasses have become too dense
- burning at this time of year will reduce grass dominance and increase forb coverage

Spray woody competitors in old-field habitats, including fields of native warm-season grasses
- multiflora rose, privet, sericea lespedeza, sweetgum, elms, etc.
- Roundup, Garlon, Arsenal, Ally, and PastureGard should be considered
- see chapter 6 in *Native Warm-Season Grasses: Identification, Establishment, and Management*, PB 1752 for herbicide recommendations and management strategies

Plant firebreaks and other disked strips not left for natural vegetation
- annual cool-season grains (such as wheat and oats) along with annual legumes (crimson and arrowleaf clover and Austrian winter peas) are excellent choices

Prepare fields with tall fescue and orchardgrass to be sprayed this fall
- mow, hay, burn, or graze field to reduce debris on field and stimulate fresh grass growth
- spray tall fescue and orchardgrass (as well as timothy, bluegrass, and bromegrasses) with a glyphosate herbicide (2 quarts/acre) and/or Select (10 – 12 ounces/acre) in late October/early November
- see chapter 5 in *Native Warm-Season Grasses: Identification, Establishment, and Management*, PB 1746, for additional information on eradicating perennial cool-season grasses

Flood fields for migrating blue-winged teal and local wood ducks

Help the cause – shoot some resident Canada geese!

Construct/repair dikes and water-control structures for flooding fields/woodlands in November/December

Sow winter wheat along edges of flooded fields to provide important forage for migrating Canada geese and American wigeon later this winter

Clean out bluebird boxes to allow more room for roosting bluebirds when cool weather arrives
- 10 or more bluebirds may roost in a single box on cold nights

Clean out wood duck boxes and replace old wood shavings with fresh shavings
- screech owls and squirrels may use the boxes through fall and winter
- repair/install predator shields if necessary

Begin timber stand improvement work
- stimulate growth among oaks, beech, cherry, persimmon, and other mast producers by killing surrounding competitors
- girdle unwanted trees and spray wound with a mixture of Garlon and Arsenal AC
- use 2 quarts Garlon 3A and 25 ounces Arsenal AC filled to 1 gallon of water

WILDLIFE DAMAGE/POPULATION MANAGEMENT

Conduct census for white-tailed deer using infrared-triggered cameras

- one camera per 100 – 150 acres
- prebait with trace mineral salt and shelled corn for one week
- after prebait week, continue baiting sites and taking pictures for 2 weeks
- refer to *Quality Deer Management: Guidelines for Implementation*, PB 1643, for information on calculating deer density estimates

If bats are in your attic, don't close them up now.

- young are still present
- if you close them up, they will die and produce a terrible odor
- maternal colonies will be leaving for hibernation before too long

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

USING FIRE AND FERTILIZATION TO ENHANCE NUTRITION FOR DEER

by Craig Harper, Professor, Wildlife Management

Fire and fertilization are commonly promoted to increase the quantity and quality of herbaceous forage and browse (leaves of woody species) in both woods and fields for white-tailed deer. Burning consumes leaf litter and debris and stimulates fresh growth. Burning also recycles nutrients and may increase nutrient availability in plants following fire. Fertilization adds nutrients to the soil that may be assimilated by plants and increase plant growth and nutrient availability. However, before striking a match or filling the fertilizer spreader, there are some important issues you should consider.

BURNING

The effect of fire on browse and forage production in woods is dependent upon the season of burn (whether dormant- or growing season), fire intensity, and canopy closure. Burning during the dormant-season consumes leaf litter and stimulates the seedbank. Small woody stems are top-killed, but re-sprout in spring. Burning during the late growing season (September) more effectively kills small woody stems and may stimulate increased forb coverage.

Intensive fire is not desirable unless you want to damage/kill many of your overstory trees. Cool fires with flame heights not exceeding 12 inches rarely damage overstory trees unless debris is present at the base of the tree, which holds heat near the base of the tree longer and may damage the cambium (inner bark) layer.

Burning in closed-canopy stands produces considerably less browse/forage than burning in stands that allow at least 30% sunlight into the stand. In stands that are not ready for regeneration, a retention cut or thinning is recommended prior to burning if increased browse/forage production is your objective. Browse/forage production in closed-canopy stands following burning may average 100 – 200 pounds per acre, whereas burning in stands that allow 30 – 50% sunlight may provide 500 – 800 pounds of browse/forage per acre. Not all this production is deer food, however. White-tailed deer are selective in what they eat. Various plants are preferred over others. Any increase in nutrition for deer is thus determined by which plant species are present.

FERTILIZATION

Fertilization is most often implemented in fields or along trails or other openings that receive ample direct sunlight. The effect of fertilization is reduced significantly when sunlight and moisture are limiting and when soil pH is low (generally less than 5.8). Before applying fertilizer, collect soil samples and get them tested to determine soil pH and the current soil nutrient levels. Money and effort are wasted if you fertilize acid soils or if soil nutrient levels are already adequate.

Even on soils with a relatively low pH and poor nutrient availability, plant nutrient levels may be adequate to meet the nutritional needs of white-tailed deer during the growing season. Before fertilizing, collect leaves from plants commonly eaten by deer and have them analyzed (your Extension agent will give you directions on how to process plant samples). If crude protein averages 16 – 17% and acid detergent fiber levels are below 35%, protein and digestible energy are not limiting for adult white-tailed deer within those plants. With fertilizer prices approaching $1,000 – 1,200 per ton, it pays to make sure fertilization is actually needed.

Fertilization in closed-canopy woods is not recommended. Commonly, no increased browse/forage results from fertilization in the woods. When there is an increase, it is slight. Cost per pound following fertilization in the woods can easily exceed $50. When compared to the efficiency of fertilizer in food plots (usually less than $0.01 per pound), it is easy to see that you are wasting money by applying fertilizer in the woods.

And no, you should not waste money fertilizing oak trees for increased acorn production, either. There are no data that show fertilizing oak trees results in increased acorn production. Acorn production comes from the outer periphery of an oak tree's crown. Thus, as a tree's crown gets larger, it is able to produce more acorns by default. In closed-canopy woods, there is no room for a tree's crown to grow. If adjacent competitors around a desired tree are killed or removed, the selected tree's crown may increase in size by 25% in just one year, without fertilization. Thus, the tree is able to produce more mast just because its crown is larger. If the tree is growing in an open area and nutrients are limiting, an application of fertilizer and/or lime may enable the tree to grow at a faster rate and develop a larger crown, if moisture is not limiting. However, even with ample nutrition and moisture during the growing season, a tree's ability to produce mast is determined by its genetic capabilities, and is still at the mercy of late freezes and rain events that can limit pollination and fruit set.

WOOD PLASTIC COMPOSITES WITH TENNESSEE SPECIES

Adam Taylor, Assistant Professor, Forest Products

Wood Plastic Composites (WPCs) are mixtures of plastic and wood flour that can be made into various products. The most common example is the decking boards that are widely available as substitutes for treated wood. Common brand names include Trex, ChoiceDek and Eon.

WCPs use about 50% wood as a filler to lighten and stiffen the finished product. Wood is also cheaper than plastic, so the wood filler reduces the final cost. However, the properties of the wood itself generally are not an important consideration. Maple and pine are the most commonly-used species because they are widely available and inexpensive.

Tennessee is home to a wide variety of species with interesting properties. Some examples are Osage orange, cherry, black walnut and red cedar, each of which has significant natural resistance to rot and insect attack. Recent research at UT has examined the possibility of using these different wood species in WPCs.

It turns out that structurally-sound WPCs can be made using any of the species tested. However, the WPCs made with cherry, cedar and Osage orange had superior properties in terms of not absorbing water and swelling and their resistance to mold and rot. This isn't too surprising – it's simply a matter of the inherent wood properties being passed on to the WPCs.

Tennessee has abundant forests with diverse wood species. These wood species have many interesting properties. By taking advantage of the inherent properties of the wood in new products such as WPCs, we can make better products.

For more information on WPCs and other options for building a deck, a publication is available at http://www.utextension.utk.edu/publications/spfiles/SP652.pdf

OAK DECLINE IN TENNESSEE

Wayne Clatterbuck, Professor, Forest Management and Silviculture

Oak decline is a slow-acting disease complex that involves the interaction of several factors such as climate, site quality, and advancing tree age. No single cause is responsible for the decline. Trees that are greater than 70 years of age and that occur on drier sites such as shallow, rocky soils on ridgetops and south- to west-facing upper slopes are most affected. During droughts, mortality of fine roots in the upper 12 inches of the soil can initiate dieback. Secondary insects and diseases (borers, root rots, defoliating insects, cankers) are contributing factors that cause further stress and damage to the trees.

The symptoms of oak decline are the progressive dieback of ⅓ to ½ of the upper crown leaves from the tips of the branches. Other symptoms include chlorotic, dwarfed or sparse foliage, development of epicormic sprouts on the stem, premature autumn leaf color, and foliage browning but remaining on the tree. The progression of the decline is slow, with tree mortality occurring 2 to 5 years after the initial stress. Advanced age and shorter-lived red oak seem to be more susceptible to the decline than longer-lived white oak.

Trees respond to the stress of drought and defoliation by using stored energy reserves. Once these stored reserves are depleted, the trees are not able to maintain the status quo and begin to decline. Mature, older trees may not have the capacity to resume normal growth with the return of favorable growing conditions, because the tree demands more resources than it possesses. Younger and smaller-sized trees recover more quickly and can rebuild their crowns because they require fewer resources to maintain themselves.

Many of the trees declining in 2009 were stressed first by the Easter freeze of 2007 that burned and killed many young leaves. The trees expended more reserve energy in leafing out a second time. The drought during the late summer of 2007 caused further tree stress. More drought during the growing season of 2008 has exacerbated tree stress.

Site and stand factors contribute to a tree's vulnerability to decline. Sites that are moisture deficient, usually ridgetops and south- and west-facing upper slopes are most susceptible. Overstocked stands with a large number of trees (too many for the growing space available) increases moisture stress during drought periods contributing to tree decline.

The best control for oak decline is through prevention by maintaining healthy, vigorous and actively-growing trees. Older trees that are mature, of advancing age, and with decreasing growth rates are at greater risk to decline. Thinning reduces stocking, decreases competition among trees for moisture and nutrients, and promotes health and vigor of remaining trees.

Oak decline is a normal process of ecosystem processes in aging upland hardwood stands. Dieback and death are expected results when mature oaks come under stress. It is a normal function of root disease fungi and insect pests to preferentially attack, kill, and decompose weakened trees. Many forest values including wildlife (mast production), timber (degraded value), and recreation (visual attractiveness) will be influenced by the decline. Whether these effects are positive or negative depends on the importance that oaks are deemed to have in the ecosystem.

Unfortunately, decline will probably continue to be a recurring problem, especially with red oaks of advanced ages on drier sites. Drought, an inciting factor with decline, generally occurs every decade. Thus, forests that may be susceptible to decline should be managed so they can best withstand these stresses.

For more information on oak decline, refer to UT Extension publication SP675 at http://utextension.tennessee.edu/publications/spfiles/SP675.pdf

HIGHLIGHTS OF RECENT FOREST RESEARCH

David Mercker, Extension Specialist, Forest Management

Extension personnel are expected to keep abreast of new findings in research as it applies to their discipline. This can be a daunting task at times, especially given the many venues where research results are reported. The following is a brief digest of recent forestry research that may be of interest and use to county Extension offices, natural resource professionals, loggers and landowners.

Soil Fertility in Intensively Managed Loblolly Pine Plantations – "Clearly, most forest-soil systems of the South will not be able to provide enough nutrients to meet the increased demands of wood production unless management systems and treatments improve nutrient supplies through fertilization or increase the availability of existing nutrients at times when they are required for vigorous stand development. In another approach, alternative silvicultural systems (i.e. not even-aged) could be used to avoid these losses, rather than having to redress the losses through nutrient inputs," Miller, J., et. al. 2006.

Wildlife Responses to Logging – In a study comparing the abundance, species richness, and species composition of wildlife on logged and unlogged hardwood forestlands in the Blue ridge and Piedmont physiological providences in Virginia, the following was summarized: "The abundance and species richness of mammals, reptiles and birds were all nearly twice as high on logged stands compared to unlogged stands. Overall, there was no difference in the abundance or species richness of amphibians . . . Contrary to public perceptions, logged stands often support a greater abundance of wildlife and more wildlife diversity, a result which is likely related to more diverse vegetation structures, higher food availability, and increase amounts of large woody debris," Fredericksen, T. 2007.

Group-Selection Openings as an Alternative Harvesting Method – "The use of group-selection methods is becoming more widespread as landowners and forest managers attempt to respond to public pressure to reduce the size of clearcut blocks. . . . Managers can maximize financial yields by using group-selection units of 1.25 acres or larger," LeDoux, C. 1999.

The Future of Forestland Area in the South – "A review of historical data shows that net change in forest area has been minimal while much of the land in the region has experienced some change over time. . . . A forecasting exercise shows that, if timber prices remain low, the South could see strong net declines in the forest area for the first time since the early twentieth century," Wear, D. 2005.

Oust (sulfometuron methyl) and the effect on invertebrates – Oust is a common herbicide used to control herbaceous competition in hardwood plantations. In a study in the coastal plain of South Carolina, where label rates were applied, results indicate "Negative effects of sulfometuron methyl treatment on these communities in treated watersheds were not observed," Michael, J. L., et. al. 2006.

Forest Certification and Private Forest Landowners – Eighty-one percent of forest landowners with 40 acres or more of forestland located in three west Tennessee counties indicated a willingness to consider forest certification. Landowners who would most likely consider it were well educated and new owners. They felt strongly that certification would improve forest management and that it would lessen the need for forestry regulation," Mercker, D. 2006.

Please interpret each of these as "snap-shot" results. The results of replicated studies could vary by region or by research method. For a copy of the articles from which these results were obtained, contact me.

TREES ARE HEAVY!

Larry Tankersley, Extension Forester

How many times have you heard, "The rope broke when we were cutting down that tree"? Who would have thought?

Well consider that a cubic foot of water weighs 62 pounds. A tree that is a foot thru (12 inches in diameter) and 60 feet tall contains 60 cubic feet. That is 60 times 62 pounds or 3,720 lbs, nearly 1.9 tons. That sounds pretty heavy to me, and that's just the water in the tree trunk and doesn't include the tree wood and the crown full of leaves.

What is the load capacity of the typical rope found around the house? A quick look at retail rope indicates that a three strand twisted manila rope a half inch thick is rated to support a minimum of 1.2 tons. This is a new rope. What if it's been around a while? Started to rot a bit.

My point is that even a modest sized tree is very heavy. It's easy to underestimate the weight when we are in a hurry to cut the tree down.

Researchers at the University of Arkansas recently weighed the merchantable portion of 272 trees of 14 different hardwood species. Their objective was to help tree owners and tree buyers with a method of estimating the weight of standing hardwood trees. Increasingly timber is bought and sold by the ton. Therefore it is important to know how many tons of wood that we have for sale.

The Arkansas publication, "Landowner's Guide to Determining Weight of Standing Hardwood Trees", provides tables that predict the weight of standing timber measuring only the diameter at breast height(dbh) or measuring dbh and total tree height. This publication can be found on the web at : http://www.uaex.edu/Other_Areas/publications/PDF/FSA-5021.pdf

If you're planning to cut any trees yourself and need to know how big a rope to use or if you are planning to sell timber anytime soon, this is very useful information. Let us know if we can help in any other way.

HARDWOOD ANALYSIS AND TRENDS (HAT) – August 2008

David Mercker, Extension Specialist, Forest Management

Forest landowners having lower quality stands of timber needing either improvement harvesting or regeneration, can consider this a good time to proceed with marketing of timber. Presently the availability is tightening for low-grade timbers used in crossties, mat timbers, cants, and other industrial timbers. Buyers are actively pursuing production of these items. Low-grade timbers are often a by-product of harvesting grade timber. Because so many sawmills have curtailed processing of grade material due to demand and supply issues, the availability of lower grade logs and heart dimension cants has subsequently dropped.

Other than this spot of good news, the general condition for the hardwood industry continues to be weak. Throughout the entire supply chain activity has been stifled by higher fuel costs and reduced demand for housing, furniture, cabinets and flooring. Further, the lending practices by financial institutions have been strained, lowering the amount of available credit needed for hardwood businesses. Manufacturing output is outpacing the demand both at the primary and secondary industry level. Grade #1 4/4 lumber in the following species has fallen this summer: cherry, red oak, hickory, black walnut and soft maple.

With a weaker U.S. dollar, exports for white oak and tulip poplar lumber have been somewhat favorable, destined for Europe and Asia respectfully. However, dealing with a scarcity in shipping containers has been frustrating. Lumber is typically viewed as a lower paying commodity for shippers, often set aside in favor of higher paying cargo. In other words, getting the product to the "paying" market has been an added challenge causing lumber to stack up, adding additional pressure for the mills. All this, in turn, reflects back to the private forest landowners.

Summarized with permission of the Hardwood Market Report, Memphis, TN.

DEPARTMENT of FORESTRY, WILDLIFE & FISHERIES

2431 Joe Johnson Drive
274 Ellington Plant Science Bdlg.
Knoxville, TN 37996-4563

E-mail: http://fwf.ag.utk.edu
Telephone: 865-974-7346
Fax: 865-974-4714

EXTENSION FACULTY AND STATE SPECIALISTS

Dr. Keith L. Belli, Professor and Department Head
865-974-7346, kbelli@tennessee.edu
Dr. Wayne K. Clatterbuck, Professor, Silviculture & Forest Management
865-974-7990, wclatterbuck@utk.edu
Dr. Craig A. Harper, Professor and Extension Wildlife Specialist
865-974-7346, charper@utk.edu
Dr. Patrick D. Keyser, Associate Professor, Native Grasslands Management
865-974-0644, pkeyser@utk.edu
Dr. Adam Taylor, Assistant Professor, Forest Products
865-945-1125, mtaylo29@utk.edu
Dr. David C. Mercker, Extension Specialist I, Forestry Specialist
731-425-4783, dcmercker@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/AGENTS

East Tennessee Region
Mr. Kelli 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

Ms. Kelley Zophy, Extension Coordinator, Web-Based Learning Center
865-974-2946, kzophy@utk.edu
Ms. Misty Huddleston, Extension Assistant, Web-Based Learning Center
865-974-1568, mhuddles@utk.edu
Mrs. Mirian Wright, Administrative Assistant
865-974-7346, mwright@utk.edu