



# Forestry, Wildlife & Fisheries Update Newsletter

Department of Forestry, Wildlife and Fisheries  
George Hopper, Department Head

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Website: <http://fwf.ag.utk.edu>

## Calendar of Events

- Nov 1** Forestry Association Meeting  
Maury/Lawrence/Giles County  
(Forest\*A\*Syst)
- Nov 4** Forestry Assn. Organizational Dinner  
Sequatchie County
- Nov. 29** Forestry Assn. Organizational Dinner  
Van Buren County
- Dec. 2** Forestry Assn. Organizational Dinner  
Henderson County

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## Notes From the Web

*Samuel Jackson, Web Coordinator*

This month, we turn our focus to a website that has proven very beneficial to 4-H youth and leaders to promote a better understanding of forests and their components. The Virginia Cooperative Extension program has developed a web-based educational tool called 4-H Virtual Forest. It can be found at <http://www.ext.vt.edu/resources/4h/virtualforest/>.

The website provides seven interactive features for youth users to participate in. Each of the seven features focuses on a particular forestry issue. For instance, there is a very nice unit on learning about plant succession. The activity allows a user to see each stage of succession, beginning with an old field and ending with a mature woodland. Other units focus on tree identification, photosynthesis, timber cruising, trees as a renewable resource, and urban sprawl. The last unit looks at timber management as a whole. It covers the management of the forest from the planning stage, to cruising, and to harvesting. This and all of the other units do a great job at introducing young 4-H'ers to forestry.

Also located on the site are resources for Agents, Teachers, and Volunteers. This link provides adults with user guides and/or the unit itself in a printable form. This material allows the information in each unit to be used for larger groups and other purposes. All in all, the 4-H Virtual Forest is a great new tool to educate our youth about natural resources.

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## **Wildlife Management Calendar for October**

*Craig A. Harper, Associate Professor, Wildlife Management*

### Spray tall fescue

- now is the optimum time to kill tall fescue!
- allows seedbank to respond
- spray in preparation to plant native warm-season grasses next spring
- use 2 quarts Roundup<sup>®</sup> with 1 pint methylated seed oil

### Burn and disc oldfields for brood habitat

- will stimulate forb growth next spring
- will reduce grass dominance where nwsg have become too dense

### Timber stand improvement

- 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<sup>®</sup> and Arsenal AC<sup>®</sup>
- use 1 quart Garlon 3A<sup>®</sup> and 6 ounces Arsenal AC<sup>®</sup> filled to 1 gallon of water

### Establish hedgerows across fields with soft mast trees and shrubs

- also plant in blocks at end of fields or in “odd” areas
- crabapple, persimmon, wild plum and others are good choices

### Build brushpiles from thinned trees and pruned limbs

- put large limbs on bottom and small limbs on top for crevice space and overhead protection

### Bushhog and spray perennial forage food plots for weed control if necessary

- refer to ***Growing and Managing Successful Food Plots for Wildlife in the Mid-South***, PB 1743, for specific information

### Plant firebreaks and other disced strips not left for natural vegetation

- annual cool-season grains (e.g., wheat and oats) along with annual legumes (crimson and arrowleaf clover and Austrian winter peas) are excellent choices

### Put up bird feeders

- it's not too early
- refer to ***Improving Your Backyard Wildlife Habitat***, PB 1633, for information on specific feeders and seed for birds

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## **Owls in Tennessee**

*Larry Tankersley, Extension Specialist, Forest Management*

Owls have long been symbols of mystery, mainly because they are generally active at night, but owls are unique and important members of our forest communities.

Owls feed mostly on rodents and small mammals. Most are nocturnal hunters but some such as the barred, hunt during the day. For the night hunters, a large pupil and cornea provide the means to process shapes in dim light. At night the iris dilates the entire eye providing the most light to the back of the eye.

The owl's unique facial disc, helps with hunting as their eyes are oriented on the front of their face rather than on the sides of their head as with most other birds. Owl eyes are long round tubes attached to the skull and cannot be shifted. To compensate owls can swivel their heads almost 270° in either direction without moving their body. An owl's field of vision is only 110 degrees. They have a binocular range of 70 degrees as opposed to humans who have 140 degrees. Their sharpest vision is straight ahead and slightly below eye level. An owl can turn its head nearly upside down to focus on something above it.

Although many owls have tufts of feathers that resemble ears their ears are actually on the side of the facial disk. This placement allows the ability to pinpoint the source of a sound. Feathers funnel sound into their ears openings. The facial disk is also slightly sunken which also "catches" and amplifies sound. Another unique feature of owl ears is that one ear is usually larger than the other and they are not shaped the same. Owls determine the exact location of their prey by facing the loudest sound and then moving their head up, down or side to side until the sound is equalized in both ears at which time the owl has determined the exact location of the sound.

Owls are stealthy hunters with the ability to fly without a sound due to specialized wings. An owl's prey rarely hears the a wing-beat before being snatched up in the bird's strong talons. When diving the owl keeps its head in line with the prey and at the last second thrusts their feet forward with the talons spread wide. The force of the attack is typically enough to stun most small rodents.

Another unique feature of owls is their digestive process. Owls do not chew. They depend entirely on their digestion to break down food. The digestive enzymes do not dissolve all parts of their food such as bones, teeth, feathers and fur. Thus owls "cough up" or regurgitate a pellet, which contains the bone fragments, hair, and feathers of the prey. The pellet is an oval shaped conglomerate typically found under an owl nest or in the nest. Owls generally swallow small prey such as mice or moles, whole. With larger prey, they separate edible versus inedible parts.

Owls eat a variety of foods, including insects, reptiles, mammals, and other birds. Great horned owls have been known to eat domestic cats, along with foxes, weasels and skunks. Owls that remain in the same general location throughout the year know where abundant prey are and will develop favorite hunting spots where ambushing prey is easiest.

Owls that breed in Tennessee include the:

**Barn owl**, found in open habitats, nesting in tree cavities, cliffs, barns and old buildings.

**Barred owl**, prefers deciduous forests, nesting in tree cavities and abandoned crow or hawk nests, occasionally on the ground or in low shrubs,

**Eastern screech owl**, found in forests, especially riparian woods, open areas and suburbs, nests in tree cavities and readily uses man-made boxes.

**Great horned owl**, most common in areas of mixed fields and woodlands, nests in old nests of crows, squirrels, and hawks, broken tree tops, and cliff ledges.

**Northern saw-whet owl**, this small owl is found in the high mountain forests of east Tennessee, nesting in old wood pecker holes and natural cavities, but also uses man-made cavities.

**Short-eared owls** and **long-eared owls** can be seen in Tennessee during the winter but they don't generally hang around all year.

*References: Danielle O'Leary and Janean Creighton, Washington State University and Chuck Nicholson's Atlas of Breeding Birds in Tennessee.*

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### **Dormant-Season Native Grass Plantings**

*Craig A. Harper, Associate Professor, Wildlife Management*

Are you planning to establish a field of native warm-season grasses (nwsg) next year? If so, dormant-season planting is a viable opportunity. Planting at this time can help break dormancy if the seed has a relatively high dormancy rate. The vast majority of native warm-season grass plantings are made in spring and early summer. Arguably, that is the best time to plant; however, dormant-season plantings can and do work – provided attention is given to seeding depth and weed control – just as with spring plantings.

The first step is to get rid of existing sod and other unwanted vegetation. Now (October – November) is the best time of year to kill perennial cool-season grasses (e.g., tall fescue and orchardgrass) as they are actively sending nutrient reserves to their root systems. Spray 2 quarts of a glyphosate herbicide (e.g., Roundup<sup>®</sup>) with 1 quart of methylated seed oil per acre for best results.

Dormant-season planting can be accomplished by drilling or top-sowing. After competing vegetation has been killed, nwsg seed can be sown with a no-till drill. If bluestems and indiagrass are planted, a drill with pickers and agitators in the seed box will be necessary to plant the fluffy seed. **Do not drill seed any deeper than ¼ inch!** The best way to check seeding depth is to plant 50 feet or so, then get off the tractor and find your seed in the furrow. **As much as 1/3 of the seed should be on top of the furrow.** The remaining seed should be just under the soil surface. If you cannot find your seed, something is wrong. Make corrections before continuing to plant.

If the seed are top-sown, the seedbed should be prepared by discing or rotovating. If the seedbed is light and fluffy after preparation, it should be cultipacked before seeding. A good way to check this is by walking on the seedbed. If you sink more than ½ inch, you need to cultipack.

**All top-sown fields should be cultipacked after planting**, regardless of how firm the seedbed was prior to planting. If you are top-sowing a site where you are concerned with erosion, you can plant a winter annual grain (e.g., 50 – 75 pounds of oats or cereal rye per acre) before sowing nwsg seed. Disc the grain in lightly, then sow nwsg seed and cultipack. That will provide a “nurse crop” on the cultivated seedbed that will die as the nwsg are beginning to germinate.

Winter annual weeds (e.g., chickweed, henbit, purple deadnettle) will come into the field through the fall and winter. They should be sprayed with a glyphosate herbicide (2 quarts per acre with surfactant) **before** they flower. It may be necessary to spray a couple of times through fall/winter. In early April, **before the nwsg germinate**, spray 20 ounces of Journey<sup>®</sup> per acre. This will kill winter annuals that have germinated since you last sprayed and provide pre-emergence weed control for approximately 60 days. (Note: do not spray switchgrass plantings with Journey<sup>®</sup>) If switchgrass was planted (as well as bluestems, indiagrass, and sideoats grama), OutRider<sup>®</sup> may be applied at 1 – 2 ounces per acre. **Do not overlook this step.** Pre-emergence herbicide applications are very important for competition control in nwsg plantings.

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### **Properties of a Forest Change as Vegetational Succession Progresses**

*David Mercker, Specialist, Forest Management*

It's fascinating how forest stands initiate after the abandonment of open land or following a major disturbance to an existing forest. For instance, if cropping ceases on an agricultural field, or if cattle are removed from a pasture, the process of vegetational succession begins. First comes grasses, forbs, and annual weeds, followed by perennials such as briars, then often light-seeded, sun-loving trees. If allowed to develop without major disturbances, the site eventually is captured by more shade-tolerant trees (such as maple, ash, beech, dogwood, etc.). This process, at least throughout regions dominated by forest landscape, is guaranteed.

Vegetational succession simply means that a landscape will retain one plant community until favorable conditions are reached for the establishment of the next one. The replacement of one by another, will continue until ecological stability is achieved. However, rarely does true stability (called climax forest) ever occur because of natural and human-induced disturbances. Disturbances continually “set back” the process of succession. The expected frequency of natural disturbances in a forest is shorter than the time required to reach ecological stability. Natural disturbances include tornados, hurricanes, insects, diseases, wind, lightning, fire, flood and ice. Human-induced disturbances include timber harvesting and land clearing for various uses. As a forest progresses toward the final stage of vegetational succession, properties of trees change. Consider the following:

- Carbohydrates (tree energy) are allocated more toward respiration (maintenance of living tissue) in trees and less toward expansion growth (stem and root elongation);
- Larger, overstory trees are less capable of filling created gaps in the forest, and understory trees respond more aggressively to the gaps;

- Larger trees become more susceptible to windthrow, diseases and insects;
- Wounds, such as branch breakage or lightning strikes, are not as quickly healed;
- One disturbance often leads to another;
- Roots shift upward from mineral soil to organic matter in an effort to follow soil temperatures, nutrients, and moisture;
- Forest stocking declines;
- Forest composition changes from pure stands to mixed;
- Forest age structure changes from even-aged to uneven-aged;

Foresters are trained through the study of silviculture to influence vegetational succession by altering the forest environment in order to achieve management objectives. A mastery of the process of vegetative succession, and its timing, is vital if foresters are to design - then implement - forest management activities. In so doing, foresters control stand composition and accelerate stand development, both which allow forest land holders to maximize their timber revenue.

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### **Planting Trees and Shrubs**

*Wayne K. Clatterbuck, Associate Professor, Forest Management and Silviculture*

Trees and shrubs enhance the aesthetic, environmental and economic value of your property. A few tips to ensure planting success of trees and shrubs are outlined below.

**Pick the right tree for the right purpose.** What is the tree's purpose? If for shade, the tree should be large and sturdy. For aesthetics, the tree should feature a graceful form and showy foliage or flowers. For wildlife, berry-producing shrubs are useful. A wide variety of species and sizes are available for planting.

**Avoid fast-growing, weak-wooded species.** Trees such as silver maple, lombardy poplar, Bradford pear or Siberian elm are susceptible to breakage from wind and ice.

**Pick the right tree for the available space.** Many species become very large. If planted in a confined area, the tree may become a problem.

**Avoid planting large forest and shade tree species in areas with limited space for root or crown growth** (next to homes, under power lines, near sewer or water lines, driveways). If space is limited, select a smaller tree species.

**Pick the right tree for the environmental conditions.** Many species require full sunlight and well-drained soils and will not survive in shady or wet sites. Match the species requirements with the site conditions.

**Plant at the right time.** Trees should be planted when they are dormant. Avoid planting during the growing season or when soils are frozen. Good planting months are November-March. Avoid planting on excessively hot, cold, or windy days.

**Plant your tree right.** Take the extra time to dig a planting hole that will be large enough to accommodate all the roots and to allow them to grow and expand. Use the natural soil to fill the planting hole. Do not add soil amendments or fertilizer.

**Give your new tree a helping hand.** Water twice a week during the growing season to maintain soil in a moist condition, but do not overwater. Mulch the area around newly planted shade trees. Mulch helps to control weeds, conserves moisture, adds nutrients as mulch breaks down and protects trees from lawnmowers and string trimmers.

Contact your local University of Tennessee Extension Office for more information about species selection, tree planting and tree care.

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### **Burning Wood in Your Fireplace or Stove**

*Wayne K. Clatterbuck, Associate Professor, Forest Management and Silviculture*

As the leaves change and the football games commence, many of us are either using or preparing to use firewood as a way to chase away the chill of the season. Fuelwood can be an economical and enjoyable way to heat our homes, but it must be used with a few precautions.

When cutting and hauling firewood, know how much the wood weighs as well as the load capacity of the truck or trailer hauling the wood. Overloading can cause overturned trucks and trailers. Common species used for fuelwood, such as oak and hickory can weigh as much as 75 lbs. per cubic foot when cut. Compact trucks can hold approximately 30 cubic feet and full-size trucks as much as 60 cubic feet of wood volume equating to loads of 2,250 to 4,500 lbs. respectively. Thus, a truck's weight capacity can be exceeded easily.

If purchasing wood from a vendor, one must know how the firewood is measured. Firewood is generally sold using a volume measurement such as cord, face cord, fireplace cord and rick. A cord is a neatly stacked pile of wood measuring 4 feet high by 8 feet long with each piece of wood 4 feet in length. That is 128 cubic feet. However, since trees are more round than rectangular, there are air spaces between the sticks of wood. Thus, a cord of wood actually has 80 to 90 cubic feet of solid wood.

A face cord has the same general measurements, but the length of the firewood logs is 20 inches, not 4 feet. Thus the unit volume is 4 feet by 8 feet by 20 inches. A rick and a fireplace cord are often regarded as the same and refer to one-third of a cord.

Remember that all these volume measures are not exact. The size and shape of individual logs, how carefully they are stacked, and if the wood is split all influence the actual wood volume

in a cord, face cord or a rick. A cord of large diameter logs will have less wood volume and more air space than a cord of smaller diameter logs.

One should also be familiar with the density of wood purchased. All species of wood have a similar energy content per unit weight. The problem is that wood is purchased on a volume basis. Therefore, a cord of pine or yellow-poplar will yield far less warmth than a cord of oak or hickory. Some higher density woods to use for firewood are oaks, beech, sugar maple, black locust and hickories. A cord of air-dried, dense hardwood such as oak or hickory weighs about 2 tons and has the heating value of a ton of coal or 200 gallons of fuel oil.

Once the firewood is home, it should be dried for optimum burning. Freshly cut wood can easily contain close to half its weight in water. If not dried prior to burning, much of the energy released will go toward drying the wood. This can lead to problems such as smoldering and creosote build-up in the fireplace. Inefficient burning can also lead to poor draft up the chimney. By burning dry firewood (less than 25% moisture), many of these problems can be avoided.

Splitting firewood helps expose more wood surface area and speed the seasoning process. Firewood should not be stored or seasoned indoors. If a cord of red oak was brought indoors (unventilated garage, etc.) at a moisture content of 70%, then nearly 1,400 pounds of water would be released when drying the firewood to 20% moisture. This extra water can result in increased condensation on the windows as well as mold and mildew growth. In addition, insects inhabiting the wood may find your home an attractive place to reside. Firewood should be seasoned for at least 3 to 6 months in an outside location that is elevated off the ground, but protected from precipitation. Old pallets make a good platform to keep firewood off the ground and a tarp works well as a weather shield. Wood pieces should be stacked perpendicular to each other so air can pass through freely.

How can you tell if the wood is properly seasoned? A few prominent signs include bark freely falling off the log, checks and splintering at the end and along the middle of the log and less weight compared to green wood of a log of similar size.

Sitting around the fire taking the chill from the air on a cold winter's day is a comforting image. Make sure that your firewood is properly seasoned before burning. Selecting a higher density wood will allow more heat per unit volume. By taking a few safety measures when procuring, drying and storing firewood, you can enjoy the ambiance and the warmth of your fireplace.

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### **Professional Forestry Assistance in Tennessee**

Wayne K. Clatterbuck, Associate Professor, Forest Management and Silviculture

The Tennessee Department of Agriculture, Division of Forestry is the state agency charged with providing woodlot and timber management planning assistance to Tennessee forest landowners. Management or stewardship plans are developed for woodland owners free-of-charge. Contact your local University of Tennessee (UT) Extension Office for the Division of Forestry office closest to you. The Division of Forestry works closely with UT Extension, Tennessee Wildlife Resources Agency (TWRA), and the Natural Resource and Conservation



Service (NRCS) in providing woodlot and farm planning for your timber and non-timber objectives. While these agencies cannot directly be involved with selling timber or placing a monetary value on a boundary of timber, they are the best source of unbiased information on forest and farm management.

Several forest industries also have foresters involved in providing landowner assistance. These foresters can be used to develop management plans that involve the commercial sale of the timber in a woodlot. Some reforestation assistance is usually available. Your local UT Extension Office or Division of Forestry office can provide information on the availability of industrial forestry assistance.

Consulting foresters are particularly suited to providing assistance in administering commercial timber sales. Their fee is usually based on the value of timber sold. Consulting foresters best represent landowner's interests since they are working directly for the landowner. Most consultants more than pay for themselves because their knowledge of local and regional markets usually increases the amount gained from the timber sale compared with what landowners can market themselves. Your local UT Extension office or Division of Forestry office can provide information on the location of these professionals.

Cost-share programs are often available to forest landowners to assist in their forest management practices. Most of the programs are administered by federal and/or state agencies. Contact any of these agencies (UT Extension, Division of Forestry or NRCS) for the requirements associated with these programs. Funds are limited and are offered mostly on a first-come, first-served basis.

Contact a natural resource professional to assist with meeting your forest land management objectives. A forest management plan is recommended to guide you in accomplishing your short-term as well as long-term goals.

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