



FORESTRY, WILDLIFE & FISHERIES UPDATE NEWSLETTER

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SUPREME COURT RULES ON FOREST ROADS

David Mercker, Extension Specialist, Forestry

On March 20th, the Supreme Court issued its ruling on the Decker v. NEDC case regarding whether storm water runoff from forest roads is point-source or nonpoint source pollution. Traditionally, EPA exempted silvicultural (logging) operations from federal permitting requirements. This long-standing interpretation was challenged (and won) by the Northwest Environmental Defense Center in the Ninth Circuit Court. However, the Supreme Court, in a 7 to 1 ruling, upheld the EPA interpretation. Scott Jones, of the Forest Landowner Association, sums it up this way, “This is a significant win for private forest landowners.”

HARDWOOD ANALYSIS AND TRENDS (HAT- APRIL 2013)

David Mercker, Extension Specialist, Forestry - Ref.: Hardwood Market Report, Memphis, Tn.

Each week **HAT** receives an update on hardwood lumber prices. Since mid-October, prices for several hardwood species have been up 19 of 24 weeks. That's an incredible run and has been driven both by increased demand and low supply. Throughout much of the region, logging activity has been curtailed due to extended wet weather. Log and lumber inventories are tight and getting tighter, this at a time when new home construction is improving. For those in the business of selling timber, logs and lumber, this bodes well. Below is a brief summary of the current situation with price change since mid-October 2012, species by species.

- Red Oak - up 26% since mid-October; both the US and international demand is growing;
- White Oak - up 19%; price in-line with red oak; supply mostly meeting demand; international demand not as robust;
- Poplar - up 11%; steady demand, with quick shipments of new production;
- Hard Maple - up 21%; white woods are favored in new home construction;
- Ash - no price change; prices rest at about 80% that of oak and often used as an oak substitute;
- Walnut - no price change; a luxury wood; demand is off;
- Hickory - up 4%; demand is favorable;
- Cherry - no price change; supply is adequate.

The three species most commonly manufactured in Tennessee Hardwood mills are red and white oaks, and poplar. For these three, the current lumber price is above where it was at the onset of the fall 2008 recession. One must return to 2005 to find prices that exceed the current value. Likely prices will remain strong then level when the weather warms, the soil dries and logging output returns to normal. For those landowners who have been holding off on selling mature timber, **HAT** submits that the time could be right. Of course such a transaction is an individual decision, so as always, first consult with a professional forester.

THE TOP TEN FAMILY FORESTRY ISSUES FOR 2013

Wayne Clatterbuck, Professor, Silviculture and Forest Management

The National Woodlands magazine, published quarterly by the National Woodland Owners Association (NWOA) annually lists the top ten family forestry issues of their members. Their 2013 concerns recently were printed in their winter 2013 edition (Volume 36, Number 1). The issues are as follows.

1. Fair income, inheritance and property taxes
2. Timber markets, biomass, and fair trade
3. Right-to-practice forestry and private property rights
4. Extension education and service forestry
5. Forest health; invasive plants, insects, disease, and animals
6. Keeping forests as forests
7. Water quality and quantity
8. Stewardship incentives: Cost-sharing and tax credits
9. Wildfire: Suppression, fuels, prescribed fire, early detection
10. Certification of loggers, foresters and forest practices

For further discussion as presented by NWOA, refer to the article in the magazine

One of the issues that consistently appear in our surveys of Tennessee forest landowners is the question: What will happen to my forest land once I am no longer able to manage it? Many forest owners are of advanced age and are planning for the future. They are considering various alternatives of maintaining forest

ownership, trusts, tax considerations, conservation preferences, or selling their property. We recommend that forest landowners evaluate carefully the options available, the finances involved and consult with estate planners to ensure that their future interests are assured.

HOW MIGHT TREES RESPOND TO INCREASED ATMOSPHERIC CO² LEVELS

David Mercker, Extension Specialist, Forestry

There is much to be said, written and researched on the subject of carbon dioxide (CO²) gas, its effects on atmospheric temperatures, and what the future holds. Some of it is even controversial . . .

The forestry sector is caught in the middle of this science. We have long understood that trees, through photosynthesis, sequester carbon and store it in stems, trunks and roots. We also understand that as trees and forests mature, at some point, through death and decay, become a net emitter of CO². Further, rather than allowing the wood to decay and release carbon back into the atmosphere, wood can be converted into long-live wood products, for instance flooring, cabinets or lumber. The result is stored carbon rather than released carbon. And through this process, commerce activity occurs: landowners sell timber, loggers are paid to harvest and transport it, mills convert it to a primary product and manufacturers make things with it. Wood is a natural, biodegradable and renewable product . . . the kind we like.

Quantifying the sequestration of carbon by forests is still a fairly young science. But researchers at the University of Michigan School of Natural Resources and Environment recently reported (Zak, et. al. 2011) that forests apparently have greater ability to sequester carbon than traditionally understood. In the 12-year study, the researchers intentionally forced high levels of CO² into the canopy of an experimental forest to simulate increased release through combustion. The forest consisted of aspen, birch and maple species.

Results indicate that, when compared to the control, trees in the experiment grew faster. During the last three years of the study, “the CO²–soaked trees grew 26 percent more than those exposed to normal levels of carbon dioxide.” Apparently the increased carbon had a fertilizing effect that encouraged trees to grow more fine roots, thereby procuring more soil nitrogen. The study then continued by indicating that as trees mature, eventually the law of diminishing returns would occur, and growth would subside.

Exactly how this might change the way that foresters manage forests in the future is not clear. But CO² sequestration likely will become, along with “wood, water, wildlife and recreation,” yet another objective factored into silvicultural training and timber harvest scheduling.

Reference: Pinchot Newsletter, Spring 2012.

WHAT'S WRONG WITH MY WHITE PINE?

Wayne Clatterbuck, Professor, Silviculture and Forest Management

Wrong Tree, Wrong Place --- The natural range of eastern white pine is at higher elevations where the climate is cool. The natural range of eastern white pine in east Tennessee is at the higher elevations of the mountains and northern Cumberland Plateau where mean temperatures average around 65 to 74 degrees F in July. Generally, white pine does not do well in areas prone to drought. Best white pine survival and growth is when precipitation is about 1.0 to 1.5 times the evaporation from shaded free water surfaces indicating that there should be a moisture surplus in all seasons. Unfortunately white pine has been planted well west of its natural range in middle and west Tennessee in environmental conditions that are not suited for the long-term survival and growth of the species. White pine does well when moisture is ample, but declines and sometimes dies during prolonged moisture deficits, especially several years of hot and dry weather (extended droughts).

White pines grow best on well-drained sandy loam soils. Heavier clay soils are not conducive to growth and survival of white pine. These heavier soils often occur at the lower elevations and west of its natural range.

White pine has wide genetic variation because of its wide geographical presence from Minnesota, east through eastern Canada, the Middle Atlantic States and New England and following the Appalachian Mountain chain to north Georgia. The wide geographic variation causes some individuals to be more adaptable to environmental conditions than others. Often several white pines within a planted row of trees die while others seem healthy, even after the trees become well-established (8 to 15 years old) due to this variation.

A few insects/diseases that affect white pine are:

- a. Needle cast ---- Caused by the fungus *Lophodermium* where spores infect needles during the fall, but browning of needles does not occur until the following spring and early summer. Typically, needles turn yellow, then brown on the lower branches of the tree leaving new needle growth on the tips of the branches (tufts).
- b. White pine weevil ---- Weevil larvae kill the terminal leader of a tree or branch. Eggs are laid in the bark of the twig, eggs hatch, and larvae bore into the twig. The terminal shoot dies and one or more branches in the uppermost whorl will assume dominance, giving the tree a forked, bushy, or crooked form. Weevil rarely kills the entire tree, but the tree will have a deformed appearance.
- c. White pine aphid ---- Sucks sap from twigs and branches causing needles to slowly turn yellow and brown. Honeydew from aphid attracts ants and can cause growth of sooty mold on needles.
- d. Pine bark adelgid ---- Cottony substance on outside of bark formed from another sap-sucking insect that attracts and lures the adelgid. The effect of the adelgid is more unsightly than injurious to the tree.
- e. Wood-boring beetles (such as Ips and southern pine beetle) usually are not as much of a problem with white pine as compared to yellow pine. The sap flow in white pine discourages wood-boring insects. However, boring insects are often found as secondary attack organisms once the tree has died.
- f. Root diseases can impact white pine, especially on adverse sites with prolonged moisture. However, root diseases are not widespread problems on sites favorable for white pine growth.

In summary, heat and moisture stress are the primary causes of decline and eventually death of white pine, especially in areas outside its natural range. White pine favors cool temperatures and adequate moisture. Although white pine tends to do well when environmental conditions are favorable, the tree is not as adaptable to prolonged drought or high temperatures that occur periodically at lower elevations in Tennessee. Site-related stresses such as soil with a high clay content, high soil pH, root injury and soil compaction also impact growth and survival. Often trees are planted and seemingly well-established on sites during favorable weather conditions (cool and moist), however, when hot and dry droughts occur, and especially for successive years, white pines become stressed and die fairly quickly.

The best recommendation is not to plant white pine on adverse sites outside its natural range. White pine is often used as a screen or property boundary for privacy. Other recommended native evergreen species that can be planted as screens include the hollies (American, Nellie Stevens, or Foster), juniper (eastern red-cedar) and native yellow pine (shortleaf pine, not Virginia pine).

BELOVED TREE BECOMES A PROBLEM

Larry Tankersley, Extension Specialist, Forestry

Looking across a long abandoned pasture, lots of “beautiful” white flowers are especially showy. Several folks have asked what kind of trees are those? I respond they are Callery pears. They look at me funny and say what? I respond again that they likely know the trees by their more commonly known moniker, “Bradford pear”. What?

That’s right our beloved Bradford pears have subtly become an invasive exotic. According to Theresa Culley and Nicole Hardiman writing in *Bioscience*, the Callery pear (*Pyrus calleryana*) an ornamental tree from China is commonly planted as varieties and cultivars in high densities in residential and commercial areas. The species cannot self-pollenate, but recent fruit set is due to crossing between different cultivars or between the scion and root stock of cultivated individuals.

A cultivar is a collection of identical plants propagated clonally from a single individual selected for one or more unique and desirable characteristics such as a nice shape with abundant flowers. Such cultivars are variants of the same species that are maintained in cultivation.

Although, Callery pear is grown primarily for ornamental use, it was initially brought to the US to combat fire blight in common pear (*Pyrus communis*). Blight resistant Callery pear was brought from China between 1916-18. Most significant was seed collected in 1919 from which the popular ornamental cultivars “Bradford” and “Autumn Blaze” originated.

The screening of Callery pear for fire blight resistance continued and included planting of large numbers of seeds and working with the resulting seedlings to determine their susceptibility. Although these initial studies focused on fire blight resistance and on overall vigor and scion-rootstock compatibility, Callery pear’s tolerance to a wide variety of detrimental environmental conditions, such as drought, soon became apparent. The Callery pear’s hardiness eventually led to the use of the species as a common rootstock for a variety of cultivated *Pyrus* species.

In an out planting at Glenn Dale, Maryland the ornamental potential of the species was first recognized. In 1952, the ornamental possibilities of one particularly vigorous, thornless tree were recognized, and cuttings of it were grafted onto Callery pear seedlings. These clones were then planted in a nearby treeless residential subdivision for testing as an ornamental street tree. After eight years, the success of these test trees was apparent and cultivar was given the name “Bradford” in honor of a horticulturist at the Experiment Station. In 1962 the tree was available commercially, and eventually became one of the most widely planted boulevard trees in urban areas in the U.S.

As Callery pear cultivars were being developed and released, the original and highly popular “Bradford” cultivar was found to have a major structural flaw. The narrow crotch angles of the branches eventually caused the individual trees to split under their own weight after 15-20 years of growth. Although many arborists began using other cultivars, many of those still in use contain scion or root stock of *P. Calleryana*.

Many traits of Callery pear contribute to its ability to spread. Seed dispersal into natural areas is promoted by birds. Rapid growth, abundant flowering and wide environmental tolerance are typical of an ideal weed.

Evidence of detrimental environmental/ecological impacts include rapid establishment crowding out slower native species. Production of dense thorny thickets impenetrable to people especially from the root sprouts of abandoned trees. Callery pear fruit are widely spread by birds into newly restored wetlands.

Removal and control. The most effective practice for wild trees is complete removal. Stump treatment with glyphosate or triclopyr soon after cutting prevents regrowth. Mowing is not effective as the species readily sprouts from an existing trunk and root system. Seedlings and shallow-rooted plants can be pulled out with care if the soil is moist.

This note is a little long, but it is fascinating to me how an innocent plant that we have used and enjoyed for many years has now become part of our “ecosystem”. Will future generations realize that they weren’t here all along?

Enjoy the Spring, Isn’t it nice after the long winter?

(This article freely adapted from Culley, Theresa M. and Nicole A. Hardiman, *The Beginning of a New Invasive Plant: A History of the Ornamental Callery Pear in the United States*, *BioScience* Dec. 2007, Vol. 57 No. 11)

WILDLIFE MANAGEMENT CALENDAR FOR MAY

Craig Harper, Professor, Wildlife Management

Wildlife Notes

Most groundhogs, beavers, raccoons, and chipmunks are born in May
 Wood duck broods begin to appear
 Peak of dove nesting season
 Wild turkey hens are incubating eggs; turkey poults begin to appear
 Grassland birds are nesting. DO NOT mow old-fields now!
 Neotropical migrant songbirds have arrived and are nesting
 Fowler's toads, northern cricket frogs, and gray treefrogs begin calling

Habitat Management

Plant native warm-season grasses and associated forbs

- **always consider managing the naturally occurring seedbank for early succession before planting nwsg for wildlife**
- non-native cool-season grasses (such as tall fescue, orchardgrass, and bromegrasses) should have been killed last fall before planting
- spraying cool-season grasses in spring before planting nwsg is not recommended; spring spraying will result in 30 – 40% coverage of csg returning within 2 years
- use appropriate preemergence herbicides when planting native grasses
- plant before early June
- plant bluestem, indiagrass, switchgrass, and sideoats grama seed **no deeper** than ¼ inch; eastern gamagrass approximately 1 inch
- be patient!
- refer to [Chapter 5](#) in *Native Warm-Season Grasses: Identification, Establishment, and Management for Wildlife and Forage Production in the Mid-South*, PB 1752, for additional information

Plant firebreaks and other disked areas not intended for naturally occurring early succession

- iron-clay cowpeas, re-seeding soybeans, grain sorghum, Egyptian wheat, and various millets provide forage and seed for a variety of wildlife species
- refer to [A Guide to Successful Wildlife Food Plots: Blending Science with Common Sense](#), PB 1769, for seeding rates and additional information

Plant warm-season food plots

- refer to [A Guide to Successful Wildlife Food Plots: Blending Science with Common Sense](#), PB 1769, for planting recommendations

Mow and spray perennial forage food plots for weed control if necessary

- refer to [A Guide to Successful Wildlife Food Plots: Blending Science with Common Sense](#), PB 1769, for specific herbicide and management recommendations

Collect soil test samples from plots that will be planted this fall and lime now as needed

- applications of lime require about 6 months before full effect on pH is realized

Establish salt/mineral licks for white-tailed deer

- realize mineral licks have **not** been found to increase antler size, body weights, or reproduction; however, trace mineral salt licks may increase visitation to sites that will be used later for infrared-triggered camera surveys

Wildlife Damage/Population Management

Leave young wildlife alone

- let nature takes its course; you'll do more harm than good by trying to save "orphans"
- young birds "fall" out of the nest as they learn to fly
- fawns remain bedded in seclusion throughout the day for the first few weeks of life

Do not allow pet cats outside; report all feral cats to the animal shelter for immediate removal

- putting a bell around a cat's neck does not keep it from killing birds and young rabbits and squirrels

Put up chicken-wire fence at least 6 inches belowground and 2 feet aboveground around vegetable gardens to repel rabbits

Put up a 2- or 3-strand electric fence (one strand 6 inches aboveground and the other 6 inches higher) to keep groundhogs and raccoons out of vegetable gardens

Erect a single-strand electric fence (2 ½ feet above ground) with aluminum tabs attached every 3 – 5 feet to repel deer from vegetable gardens

- smear peanut butter on the aluminum tabs
- deer are attracted to peanut butter; when they touch the aluminum tabs with their mouths, they learn to stay away

Plant "alternative" forages for wildlife on the outside of fencing around a garden to satiate the appetite of deer, groundhogs, and rabbits, further helping to keep them out of the garden

- refer to [*A Guide to Successful Wildlife Food Plots: Blending Science with Common Sense*](#), PB 1769, for seeding rates and additional information

Snakes are beginning to appear with warmer days

- clean-up around the house (mow, remove piles of wood, brush, and trash) to repel rodents that attract snakes
- there is no reliable "repellent" for snakes; only "snake oil"!

Snapping turtles and others are also more visible as they move about selecting sites to lay eggs

Most skunks are born in May; females will be choosing sites to give birth; close all entrances to crawl spaces and other areas where skunks are not wanted.

The best way to get rid of moles is by trapping, but you have to set the traps **correctly!**

- make sure runway (tunnel) is active before setting traps
- excavate 6-inch by 6-inch square exposing runway and determine exact depth of runway
- replace dirt firmly, but not compacted
- set trap at exact depth so mole will be caught

Vole activity may be more apparent as there is increased activity planting gardens, flowers, and shrubs. Pine voles, in particular, eat bark from roots, bulbs, tubers, and seeds in and around flower gardens and shrubbery

- flowers may be protected by placing ¼-inch mesh galvanized hardware cloth under and around flower beds
- zinc phosphide-impregnated baits are effective when placed in the runway through the burrow opening
- snap-traps baited with peanut butter and bird seed are also effective; place baited snap-traps under some type of cover, such as an open-ended box approximately 3 – 4 inches in diameter, to prevent catching birds and other non-target species

Black vultures may be problematic as calves are born

- try scare tactics using firearms and pyrotechnics as soon as vultures appear during calving season—persistence is necessary
- it is against the law to shoot a vulture without a permit
- **Contact USDA-Wildlife Services for severe problems and information on obtaining a permit**

Refer to [*Managing Nuisance Animals and Associated Damage Around the Home*](#), PB 1624, for additional information on wildlife damage management

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