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Sustainable conservationism: the next conservation wave

David Mercker, Extension Specialist, Forestry

The profession of forestry in the US has celebrated over 100 years of service. During that time forest conservation has endured two seismic conservation waves and seems to be at the start of a third (Hudnut 2010). The three are:

1. Progressive conservationism – preserving and protecting our forests through government acquisition (Theodore Roosevelt era);
2. Regulatory conservationism – whereby various agencies were authorized to issue “regs” to enforce conservation;
3. Sustainable conservationism – a new period of free-market enterprise that offers landowners economic incentives to protect natural resources.

A variety of conservation programs are already in place whereby landowners are being paid to protect the land. Consider the Conservation Reserve, Wetlands Reserve and more recently the Conservation Stewardship Programs. Other programs allow the purchase of conservation easements. With these, an easement is sold or donated whereby land is protected from development in perpetuity, but still allowing owners to keep, live on and use their land. The merits of such programs are controversial, but many would agree that society benefits by being assured healthy forests, diverse wildlife and clean water.
Arising from this third wave is interest from private enterprise to develop trade and profit from ecosystem markets - much like commodity futures trading. These markets will provide a link between **landowners who can protect the environment** and the **entities willing to pay** for such actions (such as developers, industry, etc). Consider the carbon markets that have recently languished, but could return.

Presently it is complicated, cutting edge and too much for most of us to understand. The USDA’s newly initiated Office of Environmental Markets will gradually increase the public’s understanding and participation. At this point, all we can do watch with anticipation, resentment, caution or even apathy.

HARDWOOD ANALYSIS AND TRENDS (HAT) – JANUARY 2012
David Mercker, Extension Specialist, Forestry

The intent of HAT has always been to “tell it like it is,” then let landowners and their foresters and loggers make their own financial decisions. So here it is: **2012 is not likely to show any measurable surge in timber/lumber demand**. Without an increase in demand, prices for standing timber will continue to be lifeless. Hardwood sawmills simply aren’t buying much, rather are in replacement/restocking mode. Consequently, they aren’t likely to pay top price. Why should they? Demand for their finished products is weak while the supply of standing trees is strong. If landowner A doesn’t want to sell their timber at set price, then move out of the way because landowner B does. Somebody is always ready to sell at the going price, so mills won’t be forced to extend.

The *Wall Street Pit* recently published an article that summarized the economic forecast for the timber industry (http://wallstreetpit.com/88266-an-economic-forecast-for-the-timber-industry-2012-2013). In it, they classified the wood products demand over the next two years as “moderately positive,” but then continue by indicating that by the end of 2013, things should be “markedly better.” Even this prediction though, is hedged with hesitation. The uncertainties are many:

- housing starts – presently we are building only about 1/3 of the traditional demand,
- Europe’s financial crisis and pending recession – not only could this affect exports to Europe, but any country doing business with Europe; essentially the web affects us all,
- foreign competition for our export markets – this is more of a concern for softwood pulp and lumber than for hardwoods,
- tight bank lending,
- energy costs, and
- the US economy, including unemployment, debt, regulation, the election, etc.

When we emerge from this wearisome period, the wood products sector, and everyone up and down chain, will be changed. Consider that just since 2005, 1009 sawmills have closed nationally (US Forest Service 2011). Those remaining will be lean and shell-shocked. Even then, demand will be gradual in rebuilding while supply will be plentiful due to landowners having held off. Prices will be slow to recover, perhaps never again reaching the high point of a decade ago. Because of this, hardwood mills will be selective, and will likely give preference to stands having top quality trees, with good access, larger acreages, and even those that have been third-party certified. For this reason, prudent landowners should consider certifying their forests now, in anticipation for tomorrow’s markets. And that’s, “telling it like it is!”
VALUE ADDED FROM TIMBER SALES

Drs. Don Hodges, Professor, Natural Resources Policy and Adam Taylor, Associate Professor, Forest Products

Recently we were asked to provide a simple statistic: the amount of added economic activity that results from $1 worth of timber sale. We didn’t have the answer at hand, so we thought about it...

When trees are cut, the landowner is paid for the logs produced. This is called ‘stumpage’ and stumpage revenues in the state of Tennessee amount to millions of dollars per year. However, the loggers who cut the trees make money for their work, sawmills use the logs for their lumber businesses, the lumber from sawmills feeds into further manufacturing or into retail sales, and so on. All of these steps in the wood product value change represent value added economic activity and this activity in Tennessee totals in the billions of dollars per year. Obviously ‘a lot’ of economic activity results from $1 worth of timber same – but can we put a number to it?

When timber is sold, the seller is often paid by the ton for different products such as pulpwood, sawlogs and veneer logs. These different product types are of varying quality and value, and publications such as Timber Mart-South report the average stumpage prices paid for these commodities. The US Forest Service regularly reports on the volumes, in cubic feet, of commodities harvested in individual states such as Tennessee. By using published conversion factors to go from cubic feet to tons, we can then calculate the total annual value of stumpage in Tennessee. For 2009, this value works out to be about $72½ million.

The forest industry in Tennessee is large and diverse, ranging from loggers to lumber mill and paper to pencil factories. The total amount of economic activity related to forestry activities was estimated in a recent report from economists at the University of Tennessee titled Summary of the Economic Impacts of Agriculture & Forestry in Tennessee, 2009. In that report, the Total Value Added by the forest industry is over $8 ½ billion! Total Value Added includes things such as wages paid, profits earned and taxes paid.

Dividing ‘Total Value Added’ by ‘stumpage’ shows that every $1 in timber sales results in almost $120 of value added economic activity in Tennessee. There is uncertainty in this number, because stumpage prices vary; conversion factors are imprecise and wood moves across state lines. However, it is certain that landowners who sell timber play an important role in the economy in Tennessee.

STOCKING

Wayne Clatterbuck, Professor, Silviculture and Forest Management

Stocking is a measure of growing space that trees utilize expressed on an area basis. Often density and stocking are used interchangeably. However, these two terms are quite different. Strictly, tree density is the number of trees per unit area, but does not describe area coverage. Stocking accounts for the amount of space available for continued crown growth. The following definitions are commonly used.

(a) **Fully stocked stands** – Stands in which the growing space is effectively occupied but which still have ample room for development of the crop trees.

(b) **Overstocked stands** – Stands in which the growing space is so completely utilized that growth has slowed and many trees are declining.

(c) **Understocked stands** – Stands in which the growing space is not effectively occupied by crop trees, usually too few trees per unit area and gaps exist between tree crowns.

Trees are stressed in overstocked stands because there are not enough resources (space, water, and light) to support continued growth. Trees are not vigorous and become more susceptible to insects and diseases contributing to unhealthy conditions. The solution is to remove a few trees through release, timber stand improvement or thinning to allow the remaining trees more resources for continued growth and development. Otherwise, trees in overstocked conditions will progressively decline as resources become more limited.
QUALITY: THE KEY TO HARDWOOD VALUE
Wayne Clatterbuck, Professor, Silviculture and Forest Management

The profitability of hardwood timber management depends on the property’s capacity for producing high-value wood products such as high-grade lumber and veneer. These products require trees of the proper species, that are straight, have diameters greater than 12 inches and preferably more, and few defects such as knots and rot. Defect-free logs have the greatest influence on value. A high-quality or high-grade sawlog (grade 1 or veneer) usually has twice the value of a medium-grade sawlog (grade2), and ten times the value of a low-quality sawlog of the same size.

How do you determine if your forest can produce high-quality hardwood sawlogs or veneer? The presence of high-quality trees is a good indication. However, many sites do not have high-quality trees because of past cutting practices, but have the potential or capability of producing them. This potential can be evaluated by assessing soils and the species of trees present.

Although hardwoods will grow on most any soil in Tennessee, good hardwood growth requires soils that are deep with ample moisture and drainage and good fertility. Usually the most limited growth factor for trees is moisture. In general, creek and river bottoms, coves and lower slopes have soils suitable for quality hardwoods. In a few areas, relatively fertile upland soils may be suitable as well as moisture is not limiting. However, for most upland soils, timber profits from hardwood management will be low. On these infertile or droughty soils, pines will usually outperform hardwoods in terms of volume and value growth.

Different species have different monetary values based on wood properties, wood supply and demand. The highest valued species are those with wood of darker colors, clearly visible grain or pattern, and a tendency to stay straight after manufacturing. Walnut, cherry, and oaks have most of these characteristics. Walnut and cherry are more valuable than oaks partly because they are scarcer. Lighter colored woods without a discernible grain pattern such as sweetgum and yellow-poplar are less valuable. An exception is sugar maple which is favored for its light color, hardness, and grain.

Hardwood forests can be managed profitably. Hardwood timber management should focus first on growing high-quality trees on the better sites and second on tree species.

BURNING WOOD IS ECONOMICAL FOR HOME HEATING
Wayne Clatterbuck, Professor, Silviculture and Forest Management

At today’s fuel prices, burning wood remains a wise and viable option for reducing home-heating bills. Unlike coal, oil, and gas which are nonrenewable fossil fuels that contribute to greenhouse emissions, wood is carbon neutral, renewable, and a local energy resource.

The forests in Tennessee are dominated by high-density hardwoods, such as oak and hickory that are among the best burning woods for stoves and fireplaces. Denser hardwoods weigh up to 3 tons per cord (stack of wood 4 ft wide by 4 feet tall by 8 ft long); while lighter woods (such as pine and yellow-poplar) weigh 1.5 to 2 tons per cord. Pound per pound, less dense woods have about half of the heating value per unit volume than denser woods.

Firewood is best for burning when its moisture content is around 20 percent or less. To attain these moisture contents, wood should be stacked and allowed to dry under a roof and off the ground for at least 6 months prior to burning. Green wood has moisture contents of more than 50 percent. Green wood can contain more weight in water than it does weight in wood depending on species. Air-dried or seasoned wood by contrast is 20 to 25 percent moisture content. Burning green wood wastes energy as the moisture has to be driven off before combustion can occur and can create more creosote build-up problems. Split wood dries out faster.
Consider the quantity and quality when purchasing firewood. Make sure of the unit volume measure, the moisture content (dried, seasoned wood), and the species (wood density). Split wood with end checks are indications that firewood is dried or is drying. Firewood should also be cut to the size needed for burning in your stove or fireplace.

Presently a few counties in east Tennessee are under a firewood quarantine because of the non-native, invasive Emerald ash borer and thousand canker disease of walnut. If you buy or collect your own firewood, do not move it outside the local region or quarantine area. Burn the firewood close to its source. Doing so will assist in protecting forests against the spread of these invasive pests.

**RETROACTIVE TIMBER BASIS - IRS PROSPECTIVE**

*Larry Tankersley, Extension Assoicate, Forestry*

This time of year there is always a lot of discussion about Timber Basis, especially retroactive calculations where record keeping is lacking or we simply failed to allocate part of our basis to timber when we acquired it.

Last April, 2011, the IRS issued a Timber Casualty Loss Audit Techniques Guide which discusses from the IRS perspective how to audit a claim for a Timber Casualty loss. I have copied the introduction to the auditors guide and the section on retroactive basis calculations directly from the following IRS website for your use:

http://www.irs.gov/businesses/small/article/0,,id=238854,00.html#_Toc290643113

**NOTE:** This guide is current through the publication date. Since changes may have occurred after the publication date that would affect the accuracy of this document, no guarantees are made concerning the technical accuracy after the publication date. This material was designed specifically for training purposes only. Under no circumstances should the contents be used or cited as sustaining a technical position.

**Timber Casualty Loss Audit Techniques Guide.**

Chapter One: Introduction

The purpose of this Audit Technique Guide is to provide guidance on conducting income tax examinations with a Timber Casualty Loss. It incorporates procedures and techniques that are known to be practical or unique to a Timber Casualty Loss that when combined with the examiner’s good judgment, skill and experience to complete the examination within the shortest possible time with the least burden possible to the taxpayer. Use of these techniques does not imply that the object of the examination is to find a deficiency, but rather to determine whether the reported Timber Casualty Loss has been accurately reported.

Because the facts and circumstances of each taxpayer are unique, the procedures applied will be slightly different in every examination, and the strategy will remain dynamic. The examiner will combine the techniques that apply to each specific case and apply his or her basic knowledge to the practical situation at hand.

This Timber Casualty Loss Audit Technique Guide is intended to provide direction and effectively utilize resources in the examination of a forest industry taxpayer.
Chapter 4

Retroactive Basis Determinations

Often medium and small taxpayers (SB/SE; Small Business/Self Employed) have not maintained records to verify their basis in the timber destroyed by casualty. Clearly, the taxpayer is entitled to a loss if the basis can be established or reconstructed. Retroactive basis determinations involve “ungrowing” the timber that is on the property at the time of the casualty to determine the approximate volume and value of the timber at the time of acquisition. A reconstruction of adjusted basis must consider all of the assets acquired. In addition, the property may have had very little timber or only young growth when acquired, so very little basis may be allocable to the timber affected. The following steps may be used for reconstructing basis. It is suggested that a qualified forester be consulted to assist in some of these determinations.

Step 1: When and how was the property acquired?

**Acquisition by Inheritance or Purchase** involves a determination of the Fair Market Value (FMV) at the date of acquisition.

**Acquisition by Gift or Exchange** involves a determination of the carryover or substituted basis at the date of gift or exchange. Ideally, there will be records showing donor’s basis (in the case of gift property) or transferred property basis (in the case of exchanges). If such records do not exist, it still may be possible to reconstruct basis, if the original acquisition date (of donor or exchange property) can be determined. If so, the procedures for reconstructing basis will then be similar to those described for acquisitions by inheritance or purchase, which involve a determination of the FMV of the property at the date of original acquisition.

Step 2: What are the Characteristics of the Property?

- Determine the original Purchase Price or Value for entire property
- Catalog all property rights, known zoning or environmental restrictions.
- List all property improvements at the time of acquisition (buildings, roads, fences, etc.)
- Develop an acreage summary by land class. (forest, pasture, stream, wetland, home site, landscaping, etc.)
- Obtain property tax records, maps, aerial photos of property at time of acquisition or now.
- Current Timber information:
  - Stand-by-stand listing of species, volume (MBF, cords), age, size, log grade.
  - Improvements conducted by owner - reforestation, fertilization, thinning
  - Prior timber losses, cutting or sales (volumes)
  - Timber or land acquired since original purchase
- Type of ownership (family partnership, other agreements)

Step 3: Determine Timber Growth Rate - by acre or other unit

Resources: Consulting foresters, local forestry schools or coops, local forest service offices, etc.
Step 4: Calculate Original Values, by property type

- Volume:
  - Ungrown current volumes, by species, to date of original acquisition.
  - Make other volume adjustments for purchases, reforestation, losses, sales, or cuttings.
- Value:
  - Timber Value - stumpage prices from that time period, using “then” volume, size class, etc.
  - Land Value - Property tax and real estate records from “then”.
  - Building & Other Improvements Value - Property tax and real estate records from “then”, reconstruction of cost.
  - Any other restrictions affecting value?

Step 5: Allocate Original Basis

- List all assets, “then” FMV, and percentage of total FMV
- Multiply by Original Purchase Price
- Result is Cost Basis, allocated to various assets

Step 6: Make subsequent basis adjustments to Timber Account

- Calculate depletion (basis recovery) rate by dividing original volume by cost basis.
- Reduce original basis for volumes removed
- Increase original basis for cost of improvements made
- Result is Adjusted Basis at time of Casualty

TIMBER TAX WEBINARS

Larry Tankersley, Extension Associate, Forestry

Our friends, Drs. John Greene and Linda Wang, have scheduled a couple of Timber tax webinars, for February. These folks are extremely informative. If you can check out the information at the following websites. Enjoy!

Feb. 1, 2012

http://www.timbertax.org/developments/Invitation-Timber%20Tax%20February%201%202012-1.pdf

Feb. 22, 2012

http://www.timbertax.org/developments/Invitation-Timber%20Basis%20February%2022%202012-1.pdf
WILDLIFE MANAGEMENT CALENDAR FOR FEBRUARY
Craig Harper, Professor, Wildlife Management

Wildlife Notes

White-tailed deer are shedding antlers
Great horned owls and red-tailed hawks are nesting
Bald eagles are building nests
River otters are born February and March
Spring squirrel litter are born
Opossums are born and cling to their mother’s pouch
Coyotes are breeding
Bluebirds wood ducks are looking for nesting sites
Salamanders may be seen searching for ephemeral ponds
Spring peepers and chorus frogs are calling

Habitat Management

It’s time to burn – get out the drip torch!
Burn woods and old-fields using prescribed fire to maintain early succession and to enhance cover and food availability for many wildlife species in upland hardwoods
- secure burning permit and develop burning plan with Tennessee Division of Forestry
- make sure firebreaks are in place
- get help from experienced personnel if you don’t have experience burning
- burning fields is much more beneficial for wildlife than mowing!
- 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

Disk fields to encourage early successional growth
- disking is especially good to set back succession if you can’t burn
- disk one-third of the field in a block or strips
- blocks are better than strips—makes it more difficult for predators to find nests
- if you disk strips, they should be at least 30 feet wide

Disk strips around field edges to encourage early successional growth
- disk strips the width of your sprayer to facilitate killing undesirable plants if needed
- can be used as firebreaks for fields managed with prescribed fire
- leave a soft edge buffer between woods and the field edge -- at least out to the drip-line of the trees

Plant firebreaks for additional forage, seed, bugging opportunities
- alfalfa, clovers, and annual lespedezas can be planted in mid- to late February
- warm-season plantings can be made later in May
- see A Guide to Successful Wildlife Food Plots: Blending Science with Common Sense, PB 1769, for seeding rates and additional information

If you won’t burn or disk, do not mow old-fields yet – wildlife need the cover for another month!
Plant trees/shrubs for wildlife
- establish hedgerows across fields with soft-mast bearing trees and shrubs
- hedgerows can be used to break-up fields into sections
- also plant trees/shrubs in blocks at end of fields or in “odd” areas
- apple, pear, crabapple, persimmon, wild plum, elderberry are good choices
- refer to *Improving Your Backyard Wildlife Habitat*, for a list of other trees and shrubs to consider

Fertilize/prune trees/shrubs for increased soft mast production
- this is for trees 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

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 to guard against raccoons and snakes if necessary
- in Tennessee, wood ducks begin searching for nest sites in late February / March
- bluebird boxes should be no closer than 80 yards apart
- up to 9 or more bluebirds may roost in a single bluebird box on cold nights

Finish Timber Stand Improvement activities
- stimulate growth among oaks, beech, cherry, persimmon, and other mast producers by killing surrounding competitors
- girdle unwanted trees and spray wound with imazapyr or triclopyr
- use a 25% solution of Arsenal AC (imazapyr) or a 50% solution of Garlon 3-A (triclopyr) with water
- work should be finished for the season this month – any later and herbicide effectiveness will be reduced as sap begins to flow

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 high-quality early successional habitat (native forbs and grasses with scattered brambles and shrubs) where good cover already exists
- building brushpiles along a woods edge adjacent to a tall fescue pasture or hayfield may do more harm than good because all rabbits present will then be isolated for predation

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
- it is very important to clean feeders regularly to reduce disease outbreak
- refer to *Improving Your Backyard Wildlife Habitat*, for information on specific feeders and seed for birds

Continue strip-mowing or silage chopping grain fields to provide seed for wildlife
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 in April; it is critical!
- 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 perennial clover and alfalfa plots
- ladino white clover, alsike clover, red clover, and alfalfa do well when sown in mid- to late February
- refer to A Guide to Successful Wildlife Food Plots: Blending Science with Common Sense, PB 1769, for information on planting and soil amendment

Spray weeds in cool-season food plots before the weeds get too large
- most cool-season weeds are best killed when sprayed before they reach 3 – 5 inches tall
- refer to A Guide to Successful Wildlife Food Plots: Blending Science with Common Sense, PB 1769, for herbicide recommendations
- always read and follow directions on the herbicide label before using

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
- 1% solution of Arsenal AC works well for privet
- for privet too large to spray foliage, cut stem and treat cut stump surface with 1% Arsenal AC or 50% Garlon 3-A; ALSO, stems may be treated with basal application of 20% Garlon-4 with commercially available basal oil with a penetrant

Fertilize cool-season forage plots
- those containing oats, wheat, and/or cereal rye will respond to 30 pounds of N per acre
- fertilize perennial forage plots with P and K according to soil test recommendations

Collect soil test samples from plots to be planted this fall and lime now as needed
- applications of lime require about 6 months before full effect on pH is realized

Begin drawdown of fields flooded for waterfowl in mid-February

**Wildlife Damage/Population Management**

Skunks are on the move
- skunks mate in February and March

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

Moles also mate in February, so increased activity may be evident
- “mole hills” are created as quart-sized chambers and deep runways are excavated where young may be born and raised
- moles are born in late March/early February; they are independent at 1 month
Set traps correctly to catch moles!
- make sure surface 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

Repel large winter flocks of blackbirds and starlings
- 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; you will have to scare them off at least 5 or 6 nights in a row before breaking their habit

Vultures can present a real problem for calving by plucking out eyes and eventually killing calves
- try scare tactics as soon as vultures appear during calving season
- contact USDA-Wildlife Services if problems continue; they can give you a referral to the US Fish and Wildlife Service for depredation permit if warranted

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