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Mule Logging on Small Acreage

Mike Trial, Missouri Tree Farmer

Using a mule team to skid out logs can be advantageous for small tree farms.

In developing my management plan, I established maintaining the aesthetic appeal of the property as being of greater importance than revenue, so I wanted to try doing a limited timber stand improvement (TSI) cut using a mule team instead of a mechanical skidder.



I contacted a consulting forester and discussed this with him before we walked the property to identify 40 trees whose removal would have maximum benefit on the remaining trees. We chose this number based on what we expected a mule team could haul out given the locations and distances involved, but we also had an additional 20 trees selected in case the mule team finished the first trees faster than anticipated.

The trees identified for removal had poor shape due to lack of timely pruning, were crowding better trees, had scarring due to equipment hits or damage from frost cracking. Two large natural-woods trees were badly undercut by an adjacent wet weather creek, and one older tree was over-mature and likely to fall on younger, better trees.

The targeted trees were often very near higher quality trees in the planted areas, and were scattered through the natural woods in other areas. Most of them involved relatively long hauls to the log landing since I did not want to cut shorter access trails.

For those reasons and because I was removing such a small number of trees and selecting those trees for TSI reasons rather than sawmill value, I felt I would not be able to attract bids from loggers. (cont. pg. 9)

Sustainability, Economic Return Key Issues Facing Woody Biomass Projects

Michelle Hall, University of Missouri Center for Agroforestry

The general perception that forestlands are not a sustainable energy source is a major roadblock to private investments in wood energy, according to research by University of Missouri Assistant Professor of Forestry, Francisco Aguilar.

Aguilar surveyed households across the United States to determine willingness to invest in renewable energies, as opposed to conventional investments (stocks, bonds, etc.). He found although public interest in renewable energy investments as a whole is strong, the interest extends mostly to solar and wind energy; wood energy is in fact at the very bottom of the list, interest-wise. (cont. pg. 9)

In this issue:

Mule Logging on Small Acreage	1
Key Issues Facing Woody Biomass Projects	1
Protecting the Chestnut Crop	2
Good Fences Make Good Neighbors	3
Forest from the Trees	4
Pine Straw: A New Mulch for Missouri	5
Preserving the Family Forest	6
MU Forestry Extension Expands	7
The National Network of Forest Practitioners	7
Missouri Forest Stakeholders Summit	8
CVal: A Carbon Valuation Tool	10
Bid Box	10
Calendar of Events	12

Protecting the Chestnut Crop, Bond Style

Dusty Walter, University of Missouri Center for Agroforestry

There is a potential problem in paradise! Deer have become so abundant that weed control alone is no longer sufficient to ensure good tree growth and a bountiful nut crop. Foresters have always preached that good weed control will result in better tree growth ... and it's true! In agroforestry, we continue to preach this message with an even broader application. Many of the agroforestry practices involve opportunities to harvest multiple tree crops. While agroforestry practices may involve the harvest of timber, this is often in addition to annual crops such as nuts and fruit. In order to maximize the vigor of our trees and facilitate harvesting, it is then necessary to manage weeds in these practices. One of the nut trees we believe has real crop potential throughout Missouri is the chestnut (*Castanea mollissima*). Most of the currently recommended chestnut cultivars are of Chinese origin and offer measured degrees of chestnut blight tolerance. However, should your chestnut trees be so fortunate as to produce a heavy crop, you will most certainly only be looking for leftovers after the deer have eaten their share. So, what can you do? After covering several options for controlling nuisance deer, I'd like to share with you a solution used effectively by Sen. "Kit" Bond (pictured above with his orchard's guard dogs) to keep deer out of his chestnut orchard.

If you're putting in a tree planting that requires the use of high-dollar planting stock, or an investment of your valuable personal time (such as an orchard using grafted stock, or an orchard requiring you to do the grafting), then you will want to protect that investment. There are several methods available to limit the likelihood of loss to deer. However, there are none that are 100 percent foolproof. Some of the popular methods rely on repellents. There are a variety of commercial repellents available, or you can mix your own. Most repellents rely on two methods of deterrent, smell and taste. However, no matter which repellent you choose, there are drawbacks. For example, (1) if purchased, they can be expensive; (2) many are water soluble and must be reapplied following rain events; (3) most will need to be periodically switched as deer become familiar with a product's (or formula's) odor; and (4) in general, most repellents should not be applied to fruit destined for consumption by humans (there are a few compounds labeled for use on edible crops – be sure to read labels carefully).



A second option is to use scare devices. However, most scare devices, such as a propane gas canon, use noise to scare animals and might also annoy neighbors. Scare devices also have been shown to be only temporarily effective. Animals tend to grow accustomed to the sights and sounds, and are no longer frightened away.

Fencing is a third option. Should you consider fencing? Deer are high jumpers, and a fence must normally be at least 8 feet tall and extend to the ground in order to exclude them. There are numerous designs available, including both electric and nonelectric, with a wide range of costs. One of the biggest challenges that one faces with fences is maintenance. This is especially true when using electric fences. When deer begin penetrating fences it is often due to a lack of maintenance. This can be the result of breaks in the fence structure, or vegetation lying across the electric fence, grounding it, which essentially turns portions of it off. Many times deer will not see a fence, and as a result of running into it, will break through. When using electric fencing, a popular method of alerting deer to the presence of the fence is by baiting them. By placing peanut butter on aluminum foil and wrapping it on the electric fence wire, deer are attracted and, when their curious nose and tongue receive an unwelcomed shock, quickly learn that the area is to be avoided. Aside from the fact that some people don't like the appearance of a large fence, fences, when maintained, can be a relatively effective deterrent to deer.

A compromise between conventional fencing and scare devices is to use dogs. However, most of you will immediately recognize that one of the short comings of this method is keeping the dog in the designated area. And, if you tie the dog, this will limit its ability to chase the deer away. This past fall I had the chance to visit an orchard owned by chestnut grower Sen. "Kit" Bond and saw a very nice nut crop being guarded by two of the friendliest dogs you'd ever hope to meet, unless of course you're a deer. For a number of years, Sen. Bond has shared his chestnut crop with a local Boy Scout Troop and cadets of the Missouri Military Academy who helped him harvest, and of course his resident deer herd. From what I saw this fall, in the future more of his crop will be going to local causes and less to the fattening of his deer herd. (cont. pg. 8)

Good Fences Make Good Neighbors: Boundary Line Disputes

Hank Stelzer, MU Forestry Extension

Boundary location disputes usually arise in connection with rebuilding or relocating old fences. The principle referred to as “squatter’s rights,” properly called the “doctrine of adverse possession,” then becomes important. This legal doctrine provides that someone in possession of land continuously for a period of 10 years may receive absolute title to the land if his or her possession was adverse to the interests of the true owner. The court and jury will decide.

It may require a “quiet title” lawsuit to decide whether all five of the following elements of adverse possession are present in any given factual situation. Possession must be:

1. *Actual (land used in the same way that nearby land-owners use their land),*
2. *Hostile (under claim or right),*
3. *Open and notorious (so long as the adverse possessor acts as though the land is his),*
4. *Exclusive, and*
5. *Continuous for the 10-year period*

If all five elements are met, then title can be established for the adverse possessor.

Tenants cannot assert adverse possession even after leasing the property from more than 10 years because they are there with the consent of the landowner (not “hostile use”).

The usual case of adverse possession is one in which the adverse possessor does not have guilty knowledge that he is on another person’s land. Typical adverse possession lawsuits involve innocent construction of fences off the true boundary line. It doesn’t make any difference (under Missouri law) whether the adverse possessor (really just a “trespasser”) paid or did not pay the real estate taxes on the land being claimed under adverse possession.

Keep in mind that if a title is acquired by adverse possession, it can be made “marketable of record” only after either a court has rendered judgment that all the requirements of the doctrine of adverse possession have been met, or the neighboring landowners have given each other signed, notarized, and recorded quitclaim deeds. The “quitclaim approach” is basically a settlement out-of-court and should be done with legal advice.

The question of where the boundary runs when land borders a stream may arise when water, gravel, mineral or recreational rights are disputed or when a stream changes course. The location of the boundary and the adjoining

landowner’s rights normally depend on the legal classification of the stream at the point in question.

In Missouri, riparian water (natural watercourses or lakes) may be classified one of three ways:

Public navigable. A stream is basically classified as public navigable if it is large enough for commercial watercraft to float on it. In Missouri, the landowner adjoining the stream is considered to own land down to the water’s edge (low-water mark), while the public retains ownership of the streambed. Any land that is slowly and imperceptibly built up along the shoreline is considered to belong to the adjoining owner by the doctrine of “accretion.”

Public nonnavigable. A stream that is too small to float commercial watercraft but is sufficiently large to float canoes, small fishing boats or logs is legally classified as public nonnavigable in Missouri. Here, the boundary is said to run with the center thread of the stream. Thus, the boundary would change with a gradual change in the center thread of the stream. If the stream suddenly changes course, the boundary does not change but remains at the original place. A landowner adjoining a public nonnavigable stream has the right to remove sand and gravel from it. However, his or her ownership rights are subject to the public’s right to use the stream itself for recreational purposes.

Private nonnavigable. If a stream is too small to float canoes, small fishing boats or logs, it falls into the classification of private nonnavigable. Here, adjoining landowners not only own the bed to the middle thread, but also have the right to control the use of such streams.

Examples of application of the law:

Example 1

Mr. Oak owns 40 acres of land adjoining that of Miss Maple. The division fence is in poor condition, so Mr. Oak builds a new one but mistakenly builds it 10 feet beyond the true boundary. Miss Maple objects but Mr. Oak does not move the fence. Twelve years later Miss Maple’s successor in title sues Mr. Oak.

Now Mr. Oak has a good argument to obtain title by adverse possession because his possession was open and continuous for more than 10 years and was adverse to the interests of the true owner – Miss Maple and her successors in title. **(cont. pg. 4)**

Forest from the Trees: The Bottom Line

Dave Murphy, Conservation Federation of Missouri

In October 2007, our farm became certified in the Missouri Tree Farm program. This is the fifth of six articles recounting why and how this came about.

We have bought the farm. We have sought the advice, guidance and services of the best available professional foresters. Their recommendations have been fully and exactly implemented. What do we have to show for our investment? Was it worth it?

Our first timber sale more than paid for our inventory, forest management plan, timber stand improvement, fencing costs, signage and access road work. In fact, after all that, we had approximately 25 percent of the proceeds of the initial sale left to help with the costs of our new machine shed to house equipment. It is very significant to me that the sale itself paid for all these things.

You should note that ours was not a particularly high quality forest before management and that the market was not high at the time of our sale. In addition to the revenue from the sale, we sought and received significant cost share assistance, which allowed us to intensify and speed up our management efforts. Also note that the productive, healthy and sustainable forest we have under management is much more valuable now than it was before our actions.

Because we made an inventory before we began implementation of our management plan and because we carefully tracked our every investment, we were able to minimize our tax liability for the timber sale by reporting on the cost basis. You can read University of Missouri Extension guides to learn more about timber cost basis calculations. I personally recommend attempting this only in partnership with your consulting forester and whoever prepares your tax returns. Know that the significant tax benefits of reporting with this method are possible only when you have an accurate inventory and follow a professionally prepared management plan.

In terms of forestry, each of our forest stands is much better than before we began. Overstocking, which resulted in decades of crowded canopy, stifled tree growth and poor species composition has largely been corrected. Cattle are out of the woods. The forest floor is covered with new growth of healthy seedlings. Removal of less desirable or outright invasive trees has allowed high quality trees to maximize their growth and production of wildlife foods. We have a tremendous crop of seed this year.

Just as we intended, the forest is much improved as the result of our TSI and sale. We intend that forest quality will be further enhanced with each future manipulation. Our plan is a management re-entry to each stand about every 10 years. An important lesson for me was that an average quality oak tree might be worth \$20 to a timber buyer. It takes at most 5 minutes to either prune it if you want to keep it, or to girdle it if you want to remove it. A high quality log resulting from this timely, simple action may be worth \$400 or more at maturity. Simple, easy, timely actions can pay big dividends.

In terms of wildlife, if possible we have even more deer and wild turkeys now than before we began. Food and cover abound. We have restored two ponds to make permanent water more readily available. Adjoining open lands now have much of their fertility restored and are covered with a diversity of crops and native plants.

The direct results of our management activities should be obvious. One really has but two choices to consider as a forest landowner: keep the land or sell it. Either way our land is worth more now that it is managed. If you as a forest landowner do nothing more for your woods, at least get advice from a professional who knows their business. **GH**

I will wrap up this series in the summer issue by highlighting the Missouri Tree Farm Program and why every forest landowner should be a member.

Good Fences (cont. from page 2)

Example 2

Mr. Bass and Mr. Perch own farms separated by a small creek. People in the area often use the creek for float trips. Mr. Bass decides to remove gravel from the creek bed. Mr. Perch complains, saying that Mr. Bass has no right to remove the gravel and asks for an injunction to stop him from removing the gravel.

Since this stream can be used for boats and canoes, it would be classified as a public nonnavigable stream. Each adjoining landowner would own the streambed to the center thread of the stream. Therefore, Mr. Bass could remove his share of the gravel. The ownership interests of both Mr. Bass and Mr. Perch are subject to the public's right to use the public nonnavigable stream for recreational purposes like canoeing, fishing and wading. **GH**

Pine Straw: A New Mulch for Missouri

Michelle Hall, University of Missouri Center for Agroforestry

Pine straw, the accumulation of naturally shed needles of pine trees, is an excellent landscape mulching material. It is commonly baled and sold in the southeastern U.S., where it is the No. 1 mulch used in landscape plantings. However, loblolly pine, the predominant species used for pine straw plantations in the south, may not be tolerant to the colder conditions in Missouri. Shortleaf, the only pine species native to Missouri, is not well suited to pine straw production due to its namesake short needle length.

That said, many sites in Missouri are suitable for pine straw production, said Chris Starbuck, University of Missouri associate professor of plant sciences. Starbuck and Steven Kirk, MU extension associate in plant sciences, have evaluated the potential of cold-tolerant selections of loblolly pine and pitch x loblolly hybrid pines for production of pine straw in Missouri. These trees have cold hardiness for Missouri with a similar needle length to loblolly. In addition, Starbuck is looking at selections of loblolly found growing in central Missouri.

The Specs

- Pine straw is sold in compressed bales ranging from 20 to 30 lbs., and retails for \$9 to \$10 per bale.
- A bale of pine straw will cover between 70 and 100 square feet at a depth of about 3 to 4 inches.
- Hardwood bark mulch is sold in bags ranging from 2 to 3 cubic feet, retails for \$2 to \$4 per bag, and covers between 10 and 20 square feet at a depth of about 3 to 4 inches.

Pine straw is a multi-million dollar industry, said Starbuck. A well-managed plantation in full production can gross up to \$1,000 per acre every other year from the sale of pine straw bales. (From a tree health standpoint, it is best to harvest only a portion of the plantation in a given year to allow trees to benefit from needle accumulation between harvests.)

Since pine straw is actually a leaf (needle), it benefits the landscape in much the same way decomposing leaves benefit the forest floor by recycling nutrients and maintaining soil organic matter. Hardwood bark mulch, on the other hand, when used in excess, can cause a buildup of calcium and potassium in the soil, increasing pH and causing an imbalance in soil minerals that can interfere with nutrient uptake. The minerals in pine needles are balanced so their

decomposition does not create an imbalance in the soil. Hardwood and pine bark mulch can wash away in a strong rain. Pine straw knits together and holds in place

during heavy rain, helping to prevent soil erosion.



The University of Missouri Center for Agroforestry and the MU department of horticulture are working toward creating a pine straw industry in the state of Missouri through research, product development and education designed to encourage producers, retailers and consumers to adopt the use of this renewable, sustainable, natural mulch material.

Fifteen pine genotypes have been evaluated at the Horticulture and Agroforestry Research Center (HARC) for their potential for pine straw production. A seed orchard is being created from the trees shown to be superior in the study; HARC also may supply the White State Forestry Nursery at Licking, Mo., and other nurseries with seed, Starbuck said. In the near future, Missourians will be able to use the seed created to plant their own pine straw-producing tree plantation, windbreak, alley cropping practice or silvopasture enterprise.

Future pine straw research and demonstration projects may include developing the best management practices for producing pine straw, market research to nurture the fledgling pine straw demand, on-farm demonstrations concerning pine straw production and harvest, demonstrations of pine straw mulch in urban landscapes, evaluation of producing pine straw in a linear windbreak configuration and evaluation of shade tolerant nursery stock to grow between mature pines in a pine straw plantation.

See more information about pine straw production and use – and other agroforestry practices – on the University of Missouri Center for Agroforestry Five Practices DVD. For ordering information, go to <http://www.centerforagroforestry.org/pubs/dvdorderform.asp> **GH**

Find pine straw at Heckemeyer Farms, 206 College Rd., Sikeston, MO 63801, 573-471-8198.

Preserving the Family Forest: Dogwood Case Study

Kirk Fine, Missouri Tree Farmer and Financial Planner

Material discussed herewith is meant for general illustration and/or informational purposes only. Please note that individual situations can vary. This information is not intended to be a substitute for specific individual tax, legal or investment planning advice.

You may recall that David and I requested volunteers at the 2008 Tree Farm Conference to be the subject of a case study in legacy and estate planning. We would like to thank all of the landowners that expressed an interest in being the subject of our legacy project. Unfortunately, I could only take one candidate for my plan.

The subject family is one that I feel is representative of a majority of the tree farm owners in Missouri. Of course the names have been changed and I have taken the liberty of changing some of the other identifying issues such as farm location and employment. I am sure many of you will see yourselves in this subject and their circumstances. This first installment will introduce the family and provide a background that I will build upon in future articles.

Mr. and Mrs. Dogwood are in their mid '50s and have two children, both young, college-educated adults on their own and not married but living close to home. Mr. and Mrs. Dogwood both have full time jobs and work on the family farm, located several hours away. They can visit the property only one weekend each month, sometimes every other month.

Mr. Dogwood's father (age 89) is the original owner of the farm and still lives close to the farm, but is physically unable to participate in its management and has been under 24-hour in-home care for about a year.

Mr. Dogwood and his dad have incorporated the farm under a Limited Liability Corporation (LLC) with each having a 50 percent ownership interest. Both Mr. Dogwood and his father purchased the property from a neighbor, so they both have the same cost basis.

Dad's interest is actually owned by his Irrevocable Trust. This trust is an outstanding estate planning tool that will allow the property to appreciate in value outside of his estate and will be passed to Mr. Dogwood, Dad's sole heir, at his death. The downside of this trust is that it is, as the name implies, IRREVOCABLE. He has turned the property over to the trustee of the trust to manage, which happens to be Mr. Dogwood. The language of trust mandates that the trust

proceeds and assets cannot be used for the benefit of dad. Therefore, as you can see, this strategy must be fully evaluated prior to entering into it.

The farm consists of 427 acres, two-thirds of which is forested and under a management plan consisting of seven stands. Timber has been harvested three times in the past 20 years with the next scheduled harvest in 2010. They are receiving income from oil and gas leases, hunting leases and pasture leases totaling approximately \$18,000 per year. The farm is currently utilizing contractors to accomplish tasks specified in the management plan and meet annually with a consulting forester to keep the plan up to date.

As you can see, this family is very interested in keeping the farm in the family. They have put some transition, tax and protection strategies in place, but got a little bit of a late start for implementing some risk management strategies. The use of a Limited Liability Corporation provides some protection for their personal assets and the trust provides for an easy transfer of assets as well as potential estate tax savings.

One planning issue that was not implemented was ensuring against estate depletion should Dad have to enter a Long-Term Care facility. The Deficit Reduction Act of 2005 may have an adverse impact on the Dogwoods should Dad need care. There is a 60-month look-back period when applying for Medicaid. Because the trust was established in 2007, should dad need Medicaid assistance, this law could create complications if he applies for benefits before 2012. Some people will use Long-Term Care insurance to provide an adequate buffer time for the transfer of assets without being impacted by the look-back period. Mr. Dogwood's Dad does not have this insurance and is ineligible for it at this point.

The Dogwoods have engaged the services of some members of the estate planning team during their planning. Specifically, they hired an attorney to draft the trust and set up the LLC. Their CPA handles the tax issues. They have had an ongoing relationship with the consulting forester to ensure proper management of the property.

Members not included were an insurance agent and financial advisor. If these members had been used early in the process, some of the risk management issues may have been implemented. All in all, the Dogwoods are doing all they can at this stage to ensure a seamless transition of the farm to the second generation. **(cont. pg. 9)**

MU Forestry Extension Expands

Hank Stelzer, MU Forestry Extension

The University of Missouri Extension would like to announce the hiring of a new Forestry & Business Development Specialist in South-eastern Missouri. Kyle Cunningham, located in Fredericktown, will serve Madison, Iron, Wayne, Reynolds and Carter counties.



Cunningham's primary focus will be to increase the level of active forest management on private woodlands; promote the sustainable utilization of the forest resources; and assist in the development and growth of the forest industries in the region. In partnership with the Missouri Department of Conservation, Cunningham will offer educational programs and business counseling to woodland owners and forest products businesses. Possible program topics include: basic woodlands management, forest taxation, small business management, forest products market-

ing, forest certification, carbon credits, non-timber forest products, and bio-energy.

While the forest industries are a major part of Cunningham's focus, his services as a business development specialist are available to all entrepreneurs and existing businesses in his assigned counties. These services, frequently offered at no charge, will include educational programs and individual counseling in: business plan writing, marketing planning, advertising strategy, product design, budget planning, financial loan packaging, and even international programs.

For more information or to request assistance, contact Cunningham at 573-783-3303 or cunninghamkh@missouri.edu, or your local extension office. **GH**

The National Network of Forest Practitioners



The National Network of Forest Practitioners (NNFP) promotes the mutual well being of workers, rural communities and forests by supporting individuals and groups that build sustainable relationships between forests and people.

As a national organization concerned with rural livelihoods and sustainable forestry, NNFP is active on many fronts and focused on many different issues. NNFP members are the "movers and shakers" and busy innovators in rural communities across the United States. NNFP creates opportunities to enable folks from across the country to efficiently connect with and learn from one another, and access technical assistance when it is most helpful.

NNFP's focus is to help catalyze development of sustainable forest economies in rural America. By developing sustainable forestry and natural resources management, NNFP can shift the rural economy to more sustainable activities and help focus resources on initiatives that maintain or enhance natural assets, build local ownership and broaden economic prosperity.

NNFP membership is open to all individuals, community groups, businesses and institutions actively participating in and contributing to sustainable community forestry.

For more information, call 740-593-8733 or go to www.nnfp.org **GH**

Missouri to Host NNFP Annual Meeting

The Wildwood Resort in Steelville, Mo., will be the site of the 2009 NNFP national conference May 4-7. The conference, "Sustaining Rural Communities and Forests," will gather practitioners from across the nation working to create sustainable jobs for rural communities in conservation and management of forests, as well as value-adding of sustainably produced forest products.

Topics to be covered will include:

- Forest Land Care
- Forest Cooperatives
- Stewardship Contracting and Forest Restoration
- Organic Wild Harvest and processing of NTFPs
- Sustainable Forestry and Carbon Credits
- FSC Group Certification and Green Building
- Web Marketing and the Green Consumer
- Funding and Community-Based Forestry
- National Policy to Sustain Communities and Forests
- And much, much more!

For more information, contact Scott Bagley at scott@nnfp.us or 740-593-8733. Or visit <http://nnfp.us/Activities/AnnualMeeting.htm>

Missouri Forest Stakeholder Summit

Gus Raeker, Missouri Department of Conservation

Missouri's forests are at a crossroads! Missouri's trees and forests have the potential to play a pivotal role in many of the serious challenges society is currently facing – energy demand, water quality and climate change just to name a few. At the same time, Missouri's forests are under serious threat from a number of influencers, and available resources for addressing these threats are limited.

To determine the best path forward, the Missouri Department of Conservation is currently embarking on an effort called the Missouri Forest Resource Assessment and Strategy (FRAS). Once completed, FRAS will include a comprehensive assessment of the key threats and opportunities facing Missouri's urban and rural forest resources, a vision for desired future forest conditions, and a road map for achieving this vision. The success of this effort depends on the involvement and collaboration of people like you.

This May and June, the Department will hold workshops throughout Missouri. The purpose of these meetings will be to present our Draft Forest Assessment, to gather feedback from stakeholders, and to begin collaborating on the preparation and implementation of a Forest Resource Strategy. Please invite friends, acquaintances, or organization members you think would be interested, gather your ideas and attend one of the meetings.

Each meeting will start at 10 a.m. and end by 4 p.m. Lunch will be provided. There is no charge to attend, but registration is required by contacting Donna Baldwin no later than 10 days prior to meeting date. You can reach Donna via e-mail (donna.baldwin@mdc.mo.gov) or by regular mail (MDC; Attn: Donna Baldwin; P.O. Box 180; Jefferson City, MO 65102).

For the latest information on FRAS visit the Web site: <http://mdc4.mdc.mo.gov/applications/MDCLibrary/MDCLibrary2.aspx?NodeID=2857>

This site is being continually updated with documents added as they are developed. **GH**

Summit Meeting Schedule

- May 21: Jefferson City, MDC Central Office Auditorium, 2901 W. Truman Blvd.
- May 27: Blue Springs, MDC Burr Oak Woods Nature Center, 1401 NW Park Rd.
- June 8: Winona, MDC Twin Pines Interpretive Center, Hwy 60, 1.3 miles east of Hwy 19N
- June 11: Kirkwood, MDC Powder Valley Nature Center, 11715 Cragwold Rd.
- June 16: Springfield, MDC Springfield Nature Center, 4600 S. Chrisman

Protecting the Chestnut Crop (cont. from page 2)

Powered by a 12-volt, rechargeable, deep cycle marine battery, an invisible dog fence has been placed around the 3-acre Bond chestnut orchard. The fence is composed of a buried electrically charged wire that transmits a radio signal to special dog collars which warn the dogs as they approach the orchard boundary. The dogs, rescued from a local humane society and specifically trained to stay within the orchard boundary, wore collars which, as the dogs approached the perimeter fence, emitted a warning sound that only a dog could hear, and then administered a static shock if the dogs proceeded and got too close to the perimeter fence boundary. Prior to being turned loose in the orchard, the dogs underwent extensive professional training to recognize the warnings associated with the buried electric fence. The dogs had a house and were fed and watered on a daily basis by a local caretaker.

The result: very few deer ventured into the Bond Chestnut Orchard, and those that did, didn't stay long! An additional benefit was no fence interrupted the visual appearance of the orchard. The only sign of a "fence" was one plastic container which kept the battery and transmitter out of the weather (see photo, page 2).

Is this solution for everyone? Perhaps not. However, when high value crops (such as chestnuts that can bring \$3 to \$7 per pound) need protecting, this is one solution that is effective, aesthetically pleasing, and reasonably priced. All of this and the dogs are nice company too. **GH**

Mule Logging (cont. from front page)

I decided to contract just for cutting, bucking and hauling. I would then market the logs myself.

I had met Tom McConnell in November 2007 at a Missouri Walnut Council field day and had seen photos of his mule team operation, so I gave him a call and scheduled a day of logging on my black walnut tree farm near Columbia, Mo.



Tom arrived with his loggers and mule team at 8 o'clock in the morning and we worked until 4:30 in the afternoon. Everything went very smoothly, and I was impressed by the way the team, Sam and Sadie, were able to weave their way into and out of the natural woods and how they could back up to a cut log. There was no damage to standing trees. The arch on the rig the team used to haul timbers allowed the

front of the log to be lifted slightly off the ground, so skid damage to both the log and the ground was minimized.

At the end of the day, I was very pleased with the results. We had accomplished our TSI objective with no negative impact on the woodlot, and I had 30 merchantable logs for sale. For this one-day operation, the cost exceeded the possible revenue from the handful of saleable

logs, but we accomplished our goal in an environmentally and aesthetically pleasing way.

Plus, it was a fun day watching the mule team work. **GH**

See a video of the team at work online at http://www.youtube.com/watch?v=0_j1eljngsc

Key Issues Facing Woody Biomass Projects (cont. from front page)

Aguilar's research coincides with a growth in renewable energy investments in this country. In 2007, \$148.4 billion was invested in renewable energy, of which investments in wind energy totaled 43 percent; solar, 23 percent; biofuels, 17 percent; and biomass and waste technology, 9 percent. Interestingly enough, biomass actually experienced the largest growth between 2006 and 2007 at 432 percent.

"There is potential for biomass energy," Aguilar said. "But there is still this stigma about forestland that it shouldn't be harvested." The public perception is that harvesting trees is not sustainable, when in reality harvesting is necessary to maintain a healthy forest. In addition, most people surveyed didn't believe wood energy would have high enough returns to be a smart investment choice. The return, aside from type of energy, was the most important factor when determining investment preferences, according to Aguilar's survey results.

A fairly young but wealthy demographic (26-35 year-old, primarily females, earning \$75,000-\$150,000) was most interested in wood-based alternative energy investments, Aguilar found.

"There is a limited potential niche market of investors to target," he said. "Also, if attitudes and investment expectations are increased for wood energy, the potential market

of investors should grow; the market for renewable energy investments in general is sizeable." Aguilar notes the forest sector is well prepared to capitalize on investment dollars, which also is a plus for the industry.

Aguilar acknowledges his study was completed when the nation's economy was stronger. He would like to repeat the survey to see if the current financial situation would change findings and determine a greater interest in renewable energies (wood based in particular). Aguilar also would like to study the programs, policies, incentives and equipment necessary for more private forestland owners to begin harvesting woody biomass. **GH**

Family Forest (cont. from page 6)

The next installment will begin the discussion of planning the transfer from Mr. and Mrs. Dogwood to their children and the issues involved in that process. The Dogwoods are young enough and healthy enough that, by properly employing the transition team and their suggested transfer strategies, they can make the transition to the third generation even easier. **GH**

CVal: A Carbon Valuation Tool for Foresters, Forest Landowners

The CVal spreadsheet is a powerful tool that can help foresters, managers and project developers work with private forest landowners to assess the economic profitability of participating in carbon markets.

CVal provides a discounted cash flow analysis based on a full accounting of variables, including tract size, carbon sequestration rate, carbon price and enrollment and trading costs. Automated, financial break-even analyses in the macros version quickly assess threshold values of key variables for profitable projects and the program readily performs “what if” calculations after storing starting values.

CVal was designed to evaluate managed forest and afforestation projects traded on the Chicago Climate Exchange, but its methodology could be adapted for other trading mechanisms and agricultural sequestration projects. Documentation is provided in the program itself and in GTR-180.

CVal was developed by Ted Bilek (USFS Forest Products Lab), Peter Becker (Eastern Ozarks Forestry Council), and Tim McAbee (LandMark Systems, formerly of Clearwater Forest Consultants, LLC), and is available at no cost. The spreadsheets and accompanying manual can be downloaded at: http://www.fpl.fs.fed.us/documnts/fplgtr/fpl_gtr180.html GH

The Bid Box

(All volumes reported in Doyle Scale)

Cape Girardeau County

- 82 acres
- Good white oak
- 713 trees
- Estimated volume: 176,516 bd. ft.
- Volume breakdown

Species	No. Trees	Est. Vol.
White oak	207	64,955
Black oak	274	60,813
Post oak	94	18,371
Scarlet oak	56	17,004
Northern red oak	21	6,474
Hickory	32	5,171
Other	29	3,728
TOTAL	713	176,516

- Forester valued the sale at \$42,000
- Six bids received
 - o \$48,000 (accepted)
 - o \$35,100
 - o \$32,845
 - o \$22,088
 - o \$20,700
 - o \$20,500

- **Return: \$585 per acre**

Bollinger County

- 74 acres
- Some good white oak; nice yellow poplar
- 698 trees
- Estimated volume: 131,021 bd. ft.
- Volume breakdown

Species	No. Trees	Est. Vol.
Black oak	129	24,515
Yellow poplar	51	16,989
Northern red oak	61	15,803
Scarlet oak	69	14,852
White oak	72	14,592
Ash	69	11,265
Hickory	70	8,180
Sugar maple	72	6,722
Black walnut	22	4,154
Other	83	13,949
TOTAL	698	131,021

- Forester valued the sale at \$25,000
- Four bids received
 - o \$30,000 (accepted)
 - o \$18,000
 - o \$11,366
 - o \$11,000

- **Return: \$405 per acre**

Do you have a timber sale for The Bid Box? We would love to hear from you!

The Back Page

Deadlines for Newsletter Submissions

Spring Issue: March 15
Summer Issue: June 15
Fall Issue: September 15
Winter Issue: December 15

Welcome Back Larry!

Larry Godsey, Economist, Center for Agroforestry, is home safe and sound from his deployment to Afghanistan! His Missouri National Guard unit spent more than 12 months in some of the most hostile areas of eastern Afghanistan assisting farmers in rebuilding their agricultural base. After listening to him recount his experience and seeing some of the images he captured, all I can say is, "Thank you, Larry. You served US well!" Look for insightful agroforestry economic articles from him in coming GH issues.

E-mail or Snail Mail?

In an effort to reduce our mailing costs, beginning with this issue, state and federal natural resource professionals will receive **Green Horizons** electronically. For those who crave tactile gratification, we will gladly honor your request to receive future issues via snail mail. By the same token, if you prefer sacrificing electrons over trees, then e-mail us and we will add you to our listserv.

GH Online: Find **Green Horizons** on the Internet at
<http://agebb.missouri.edu/agforest/index.htm> or
<http://snr.missouri.edu/forestry/extension/>

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GREEN HORIZONS



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Calendar of Events

May 4-7, 2009: NNFP National Conference, Wildwood Resort, Steelville, Mo. See more information, page 7.

May 21, 2009: Missouri Forest Stakeholder Summit Meeting, Jefferson City, Mo. See page 8 for more information.

May 27, 2009: Missouri Forest Stakeholder Summit Meeting, Blue Springs, Mo. See page 8 for more information.

May 31-June 3, 2009: 11th North American Agroforestry Conference, Stoney Creek Inn, Columbia, Mo. Please see www.centerforagroforestry.org for more information or contact Julie Rhoads, Technology Transfer Events Coordinator, University of Missouri Center for Agroforestry, 573-882-3234 or RhoadsJ@missouri.edu

June 8, 2009: Missouri Forest Stakeholder Summit Meeting, Winona, Mo. See page 8 for more information.

June 11, 2009: Missouri Forest Stakeholder Summit Meeting, Kirkwood, Mo. See page 8 for more information.

June 16, 2009: Missouri Forest Stakeholder Summit Meeting, Springfield, Mo. See page 8 for more information.

July 19-23, 2009: 100th Anniversary Meeting of the Northern Nut Growers Association, Lafayette, Ind. See www.nutgrowing.org for details.

Aug. 2-5, 2009: Walnut Council Annual Meeting, Centerville, Ind. Details and registration forms will be posted in summer 2009 at www.walnutcouncil.org, or can be obtained from Liz Jackson, Jackson@purdue.edu, 765-583-3501.