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Pawpaw: Tropical Native Fruit

Michelle Hall, MU Center for Agroforestry

It's hard to believe a fruit with the flavor of the tropics could be native to Missouri. But it's true. And the University of Missouri Center for Agroforestry is working to get the word out about the pawpaw.

"People are pretty blown away that this exists here," said Michael Gold, associate director of the Center and research professor of forestry. "That's the fun thing about introducing people to it."

Pawpaw is an oval-shaped fruit indigenous to the Eastern U.S. Its flesh is peachy-colored, creamy, custard-like, and tastes like a cross between a banana, mango and pineapple. Taste-wise and botanically, it is related to tropical fruits; pawpaw is in the mostly tropical custard apple family, *Annonaceae*. In its native habitat, the pawpaw tree grows in clumps in deep, wet soils as an understory tree.

The pawpaw is eaten fresh (avoiding the numerous large black seeds) or processed into desserts and baked goods – it's a great texture and flavor for adding to smoothies, ice cream and yogurt. Pawpaws are higher in protein than most fruits, and are a good source of calcium and Vitamin C.

The University of Missouri Center for Agroforestry is partnered with a group of universities and other organizations to try to shift pawpaw from the wild to a cultivated orchard crop, Gold said. The Center's Dr. Ken Hunt planted one acre composed of 10 cultivars at the Horticulture and Agroforestry Research Center, New Franklin, in 1999. They are looking to see which pawpaw cultivars are best for Missouri, in terms of size, taste, etc. Cultivars are

grown in orchards in full sun and produce a much heavier fruit set and larger fruits than in the wild.

Although the pawpaw is a healthy fresh fruit choice and has a distinct, tropical flavor (**cont. pg. 7**)



Wood Energy Update: MDC Fuels for Schools Program

John Tuttle, Missouri Department of Conservation

The Missouri Department of Conservation (MDC), in cooperation with the USDA Forest Service, is offering grants of almost \$1 million each to public schools in select Missouri counties for six "Fuels for Schools" projects. The grants are being funded through The American Recovery and Reinvestment Act (ARRA).

Fuels for Schools will assist public schools in heavily forested areas of southern Missouri to install and operate boiler systems that use woody biomass from local public and private forest land to heat and/or cool their facilities. This technology should help reduce dependence on fossil fuels, reduce energy costs for schools, create or retain local jobs and support healthy forests and the state's forest industry.

(**cont. pg. 3**)

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It's All Connected

Michelle Hall, MU Center for Agroforestry

Jason Hubbard is passionate about what he does.

Hubbard, an assistant professor of Forest Hydrology at the University of Missouri, studies how physical processes affect living organisms – how cutting down a few trees in a forest can affect the water quality in a nearby stream, for example. Hubbard says he could spend “24 hours a day” thinking about how everything on this planet is interconnected. And, he says, that begins with trees.

Hubbard joined the MU forestry faculty in 2007 and has already taken on various projects across the state. He administers about \$2 million in grants from the University, Environmental Protection Agency, Missouri Department of Conservation, Missouri Department of Natural Resources, City of Columbia, and Boone County; and employs nine students and one post-doctoral associate to assist with these projects.

At the Ozark-situated University Forest, Hubbard is looking at the effects of long-term managed burning on soil and water infiltration. His findings show repeated fire slows down infiltration – water doesn't easily get to roots – not great for the trees. In addition, these prescribed burns lower species diversity in the forest.

Hubbard is looking at light and energy attenuation through the forest canopy at the MU Baskett Wildlife Research and Education Center in mid-Missouri. This study focuses on tree density and growth – if too many trees are removed from an area, for example, stream water heats up. Stream temperature is critical to the health of a body of water.

At the Prairie Fork Conservation Area in eastern Missouri, Hubbard monitors a site that has been converted from agricultural land, to prairie, and eventually, to a woodland. He is quantifying the physical differences between the three land uses – water amounts, erosion, etc.

Finally, Hubbard's largest project looks at mid-Missouri's “impaired” Hinkson Creek Watershed. This project studies the effects of urbanization to the stream, which begins in a rural area and flows into the city.

“What happens when you build Columbia?” Hubbard said. “Everything changes.”



Hubbard stands by one of the monitoring stations as part of his Hinkson Creek project.

Although Hinkson Creek has been on the EPA's list of “impaired” waterways since 1998, no one has monitored the waterway that has resulted in pinpointing exactly what's wrong with it. Hubbard's crew has set up five \$60,000 monitoring sites along the stream to measure the environment, sediment, nutrients, water temperature and water levels, for example. Hubbard is comparing the data taken from the different sites – some forested or agricultural, some more urban.

The project has a variety of goals, the first of which is to get the Creek removed from the EPA's “impaired” list. Hubbard wants to see if flood plains are still effective today, relative to 100 years ago; see how land use affects the flux of nutrients; and gauge climatic differences between the more forested and the urban areas of the stream. So far, Hubbard has determined it is warmer in Columbia, less humid and with more precipitation. Couple that with the low infiltration of Missouri soils, and storm water run off becomes a big problem – higher sediment loads for the creek, more flooding, etc.

One solution he sees already? Rehabilitating old flood plains – with trees, of course!

“Everything influences and is influenced by our forested systems,” Hubbard said. “I take a systems approach – I like to see how it all fits together.” **GH**

HYDROBIOGEOCHEMISTRY

No, we didn't make this word up, but it is a new science and Hubbard is on the front line of applying the concept to his research. Hydrobiogeochemistry is the study of the flux of nutrients – through a forest, for example.

Forest Health Update

Hank Stelzer, MU Forestry Extension

'Old' Threat: EAB It does not appear the emerald ash borer (EAB) has spread beyond Wayne County, where it was spotted last year, to other parts of Missouri. This spring, traps were placed around the U.S. Army Corps of Engineers' Greenville Recreation Area at Lake Wapapello, where the first infestation was discovered. Scientists thought the beetle would travel on firewood, so crews also set out traps at campgrounds and parks as far north as Maryville and as far south as Table Rock Lake.

Over the last few weeks, Federal and state agriculture officials have been picking through more than 1,000 sticky traps looking for "the green menace." To date, more than half of the traps have been searched with no sign of the emerald ash borer.

'New' Threat: Walnut Twig Beetle and Thousand Cankers Disease of Black Walnut Within the past

decade an unusual decline of black walnut (*Juglans nigra*) has been observed in several western states. Now the threat is trying to move east.

Initial symptoms involve a yellowing and thinning of the upper crown, which progresses to include death of progressively larger branches. During the final stages, large areas of foliage may rapidly wilt. Trees often are killed within three years after initial symptoms are noted. Tree mortality is the result of attack by the walnut twig beetle (*Pityophthorus juglandis*) and subsequent canker development around beetle galleries caused by a fungal associate (*Geosmithia sp.*) of the beetle. A second fungus (*Fusarium solani*) is also associated with canker formation on the trunk and scaffold branches. The proposed name for this insect-disease complex is thousand cankers.

So little is known about this disease complex that the Missouri Department of Agriculture and the Missouri Department of Conservation are co-sponsoring a national conference Nov. 3-4 in St. Louis. For more information about the conference or to register, contact Bonnie Russell at 573-522-1109. **GH**

Fuels for Schools (cont. from front page)

The Fuels for Schools projects will help create a stronger market for woody material historically considered waste, such as unhealthy or small-diameter trees and wood debris left from logging. These forest products currently have little or no commercial value; the Fuels for Schools projects can provide micro-markets for wood chips produced from them.

The projects also will support forest health, a key part of the Department's mission, by making it economical to thin overcrowded forest stands and remove diseased and insect-infested trees.

Successful projects also will serve as examples to other schools, businesses and government agencies throughout Missouri that may be interested in wood-fueled energy systems.

Similar efforts in other states have proved successful. Missouri's projects will be based on the Fuels for Schools and Beyond program. This is a partnership between the USDA Forest Service's State & Private Forestry program, the State Foresters of Montana, North Dakota, Idaho, Nevada, Utah and Wyoming, and the Bitter Root Resource Conservation and Development (RC&D) Area, Inc., to promote and facilitate the use of forest biomass waste for heating, cooling and power in public and private buildings.

According to the Fuels for Schools and Beyond Web site (www.fuelsforschools.info), "In general, fuel cost savings for projects that have replaced natural gas boiler systems have averaged at 25% while facilities replacing fuel oil systems have enjoyed savings of 50-75%."

Grant solicitations have been mailed to public schools in counties selected as the most heavily forested ones in the state: Barry, Bollinger, Butler, Carter, Crawford, Dent, Douglas, Howell, Iron, Madison, Oregon, Ozark, Perry, Phelps, Pulaski, Reynolds, Ripley, Shannon, Stone, Taney, Texas, Washington, Wayne and Wright. Since the grants are funded through the ARRA, there is a very aggressive timeline to get the projects completed. Completed applications must be received by Oct. 23, 2009.

A multi-agency selection committee will rank grant applications. The rankings will be based on each school district's economic needs, how dependent it is on the forest products industry, its ability to implement the project quickly, its proximity to public and private forest land and its partnerships with other public entities that could benefit from the biomass energy system. **GH**

For more information, contact John Tuttle at John.Tuttle@mdc.mo.gov.

Tree Farm PEFC Certification Update

Tammy Homfeldt and Steve Westin, Missouri State Tree Farm Committee

Missouri Tree Farmers are now third-party certified under the American Tree Farm System's (ATFS) North Central Region certificate issued by PricewaterhouseCoopers Aug. 17, 2009.

Certification is a two-stage process. First, states in the 10-state ATFS North Central Region are selected and then Tree Farmers in each state are randomly selected for on-site visits. Missouri, Kansas and Kentucky represented the Region this year and 29 Missouri Tree Farms comprised the Show-Me State sample.

The auditors appreciated both the flexibility of the Missouri Tree Farm Committee, field staff and landowners, and all their hard work assembling the required information for each Tree Farm before the field visits.

The auditors commended landowners and foresters for improving wildlife habitat; restoring riparian corridors, glades and savannas; maintaining close working relationships between landowner and forester; being sensitive to aesthetic concerns related to forest management activities; willingness to host educational events; and getting out and doing what needed to be done!

One focus of the assessment was the forest management plan associated with each Tree Farm, and the conformance of the plan to the published Tree Farm Standards of Sustainability.

Five of the 29 plans audited in Missouri were found to be lacking in their adherence to the ATFS Standard. This issue was seen in the other two states visited this year by the certification team and the trend of nonconformance resulted in a "major" non-conformance for the North Central region.

There were three conditions found that triggered this finding:

- The plan is too brief for the scale of the operation.
- The plan is not active with the landowner's stated objectives.
- The plan is missing required elements.

Short-term solutions are already underway. The landowners and foresters involved with these five plans have been notified and are working to upgrade the plans so that they conform to the Tree Farm Standard. In addition, the State Tree Farm Committee in cooperation with the ATFS is increasing inspector contact, and revising the inspector

If a Tree Farmer wishes to market their timber as being certified sustainable, they need to tell their professional forester or log buyer that they are ATFS certified. ATFS has plans to do some sort of tear out or postcard mailing with their Tree Farm number and certificate number so that they can show that to anyone buying the wood.

training program, the national required sample formula, and the 004 form.

Long-term corrective measures include developing continual training modules for inspectors and focusing on management plan education for landowners. The certification team from PricewaterhouseCoopers has accepted the corrective action plans for the North Central region and the "major" nonconformance was downgraded to a "minor" nonconformance.

The Programme for the Endorsement of Forest Certification schemes (PEFC) recognition of the Tree Farm System has changed the nature of the organization. What was once a landowner recognition program has been modified to become a forest certification program.

ATFS has added certification as a complement to the education, outreach and recognition activities in which they are already involved.

Therefore, it is critical for landowners who wish to remain an active Tree Farmer and remain in the program to continue to be reminded of these essential aspects of the program.

- Good record keeping is a must.
- There is the potential to be visited during a certification assessment.
- Landowners need to be able to demonstrate understanding and involvement with the management of their lands. If interviewed by an auditor you need to:
 - o Be familiar with dates and details of management activity.
 - o Be familiar with basic forestry terminology.
 - o Be familiar with the Tree Farm Standard of Sustainability. A revised version of the Standard that will be in effect for the next 5 years is due out this fall.

(cont. pg. 5)

Tree Farm and PEFC Certification Update (cont. from page 4)

- Landowners must implement management plan recommendations.
- Management plans must reflect the owner's goals and objectives.
- Management plans must be up to date and active.
- Landowners must use BMPs, know what they are, and why they were implemented.
- Management plans must be appropriate for the scale of the property.
- Contractors working for the landowner need to have liability insurance, worker's comp., and any other required licenses (pesticide applicator's, etc.). These requirements need to be stated in contracts and landowners need to ask contractors about these issues as well.
- If prescribed fire is used on the property, make sure a burn plan is prepared and retained after the fact. **GH**

If you have any questions, please contact your inspecting forester or the Missouri Tree Farm Administrator, Tammy Homfeldt at (573) 634-3252.

NEW FORMAT FOR ANNUAL TREE FARM

CONFERENCE Starting in the fall of 2010, the annual Missouri Tree Farm Conference will rotate to the location of the previous year's Missouri State Tree Farmer. It will be a Saturday event with indoor presentations in the morning, followed by lunch and farm tour in the afternoon. This new format will be easier on landowner pocketbooks and allow them to see forestry in action across the Show-Me State.

ATFS Announces Online Certification Verification Service

Victoria Lockhart, The American Tree Farm System

This Web-based service allows subscribers to access the ATFS database to confirm the certification status of ATFS certified properties. Begun in anticipation of SFI® audit and chain-of-custody verification needs, ATFS has created a real-time, Web-based system that will allow subscribers to look up more than 39,000 individual properties covering 23 million acres and verify their ATFS certification status.

The system is designed so that users may log in with an ATFS-issued password, enter specific data about the tract in question and then receive a real-time reply regarding its certification status (i.e., Certified, Not Certified, Not In The System).

Fees are based on annual, unlimited use for each facility and its own individual network of wood procurement and verification. One subscription for a single mill is \$500/year; additional mills owned by the same entity will be an additional \$500/year per mill, up to three mills. For companies wishing to subscribe for more than three mills, there is a flat fee of \$1,500/year. Wood buyers and consulting firms may purchase a single subscription for \$400/year.

Upon receipt of the fee, subscribers will be given password access to the on-line verification system (OVS). The password can be shared by the subscriber to appropriate verifiers within the facility's procurement network. However, supporting facility procurement entities such as wood buyers and other extra-company wood consolidation entities will need to subscribe separately.

Fees are assessed yearly on the date the contract was signed by the subscriber. Passwords expire at year's end and companies must renew to continue to use the OVS. Invoicing will occur during the last half of the third quarter, giving subscribers appropriate time to submit the upcoming year's fee and have their subscription extended.

For further information or to learn how your organization can subscribe, please contact Victoria Lockhart, ATFS, (202) 463-2738 or e-mail her at vlockhart@forestfoundation.org. **GH**

After the Storm: Rehabilitating Unsalvageable Timber Stands

Skip Mourglia, USDA NRCS, & Frances Main, Missouri Department of Conservation

Editors' note: The mention of specific manufacturers does not imply endorsement on the part of Green Horizons, the Missouri Department of Conservation, USDA NRCS, or the Southwest Missouri RC&D.

Very few parts of Missouri have been spared a devastating storm in the last couple of years. In many instances, forest landowners have been left with unsalvageable timber stands choked with downed trees, limbs and opportunistic vines taking advantage of the sudden sunlight.

The sustainability of your forest may be in question if the debris on the ground and the vine cover is so thick that new seedlings cannot get established, and trees with severely damaged tops cannot be cut back to encourage stump sprouts. In addition, all this downed material increases the potential for an intense forest fire; one that, if it does not outright kills your trees that made it through the storm, could create entry points for disease, insects and decay.

So, what are your options? First and foremost, think safety! Even a small sapling bent over has the potential to release its bound-up energy in a deadly way if cut improperly.

Next, consider how much "slash" you have on the ground. Slash refers to all the limbs, broken tops, and toppled trees that are on the ground.

Light slash treatments might simply involve what is commonly called "stomp and cut." A lightweight chainsaw is the perfect tool for cutting up larger material to get it close to the ground for speedier decomposition. This can be a great way to stay out of trouble, because you will be in the woods all the time! You can consider hiring RESPONSIBLE high school kids who know how to operate



From Top: Fig. 1. This forest hog can grind up to 6-inch debris. Fig. 2. This skid-steer-mounted grinder can also process up to 6-inch material. Fig. 3. The Fecon grinder can easily grind 12-inch standing trees. Fig. 4. Leaving a relatively high stump prevents damage to grinding head in rocky terrain. **Left:** Fig. 5. Grinding down to ground line does not prevent sprouting

a chainsaw. Just make sure you have good liability insurance. Storm debris that has been on the ground longer than 18 months is dry and brittle and stems 3 inches diameter and smaller can be easily stomped to the ground.

For medium and heavy slash treatments, mechanized equipment will be the order of the day. Plus, with the operator being in an enclosed cab, the risk of personal injury is greatly reduced.

The forest hog and skid steer-mounted grinder heads (Fig 1 and 2, respectively) can easily work up debris up to 6 inches diameter. If there is quite a bit of material larger than that, it should be done using the dedicated FE-CON grinder (Fig 3).

This unit can handle up to 12 inches, and sometimes larger. A common feature though is that they are track vehicles, so there is minimal soil compaction.

One thing to remember about grinding is that it cannot be used on steep ground. In these situations, one might consider pulling lighter weight stems to a flat landing using a log arch and four-wheeler, where they can easily be cut up for

firewood. The trimmings from the transported stems can be left in piles that can be ground up using forestry grinding equipment.

One question posed by foresters was, "Will a ground stump resprout?" It was thought that maintaining the integrity of the root collar near the soil line (Fig. 4) would be critical to ensure successful sprouting. Fig. 5 shows that relatively large oak stumps ground completely (**cont. pg. 7**)

After the Storm (cont. from page 6)

to the ground can resprout. In fact, all species sprout back readily, so one must consider treating the stumps of undesirable species with a herbicide to avoid unwanted sprouts.

Last, but certainly not least, is cost. Commercial operators charge anywhere from \$80/hour (Bobcat with grinder head) to \$140/hour (FECON grinder operator). The USDA NRCS Environmental Quality Improvement Program (EQIP) provides financial cost sharing on a per acre basis.

The commercial hourly fees may cause confusion for landowners who want to know the per acre cost. With a light level of slash (downed debris that still allows access through almost all areas of the forest), expect a cost of \$100-200/acre. With very heavy downed debris, making the forest all but impossible to walk through, expect to pay at least \$600/acre. If you have a medium slash level (discontinuous and most stems less than four inches), walking in a straight line is not possible in most areas, but there are still routes you can take to get through your forest. Expect to pay somewhere between the light and heavy rate.

Experienced forest grinding operators can give you an idea of the cost when they look at the site and know the acreage involved. Some tree species, such as white oak and hickory, are harder for the machines to work on due to the stringy nature of the shattered wood, so keep that in mind when requesting a price quote from an operator.

Areas with boulders or large rocks will result in more damage to the grinding teeth and take longer to complete as the operator tries not to hit rock, hence a higher cost. Also, if you want residual mulch finely ground (i.e. around a woodland home), the operator will have to keep going back over the coarse, shredded mulch. For most forest management work, going over the debris one time with either a grinder head or a forest hog is sufficient. **GH**

For more information about the process and how to contact a contractor with the proper equipment, contact the Southwest Missouri RC&D office at 417-732-6485.

Pawpaw: Tropical Native Fruit (cont. from front page)

(right here in the Midwest!) there is a slight “catch.” The fruit is highly perishable (keeps only a couple of days after harvest) and does not ship well. Pawpaw harvest lasts for only a few weeks between August and October, depending on the cultivar.

Hunt and others took the Center for Agroforestry’s harvest (the second big one since planting) to the Columbia Farmers’ Market in September to test the public’s response to the fruit for the second year.

The inventory went fast. At 50 cents to \$1 apiece, the 140 pawpaw Hunt selected were sold out in a couple of hours. Samples were available to familiarize buyers with the unique taste. Most were pleasantly surprised by the sweet, creamy fruit. Some were very glad to see pawpaw back at the market after developing a taste for them a year ago!

A 2008 after-purchase survey showed respondents were very satisfied with the pawpaw they purchased in terms of appearance, taste and price. A similar survey was distributed this September; results are still coming in.

Although the perishability of pawpaw has long counted them out as prime candidates for heavy cultivation, Gold

and others feel pawpaw could have a future as an orchard crop. They are native, have few pests (easy to grow organically), are fairly low maintenance and are a beautiful tree; in addition, the perishability can be addressed by freezing pawpaw pulp.



Above: MU Center for Agroforestry representatives prepare samples of and sell fresh pawpaw at the Columbia Farmers’ Market in September.

“Our goal is to bring pawpaw on as another new alternative crop for landowners,” Gold said. “Right now we’re sort of ‘dipping our toe in the water’ to see if the market is receptive. Stay tuned!” **GH**

For more information about growing pawpaw, contact Hunt at huntk@missouri.edu, or Gold at goldm@missouri.edu. Cultivars recommended by the Center can be purchased at Forrest Keeling Nursery, <http://www.fknursery.com/>

The Food, Conservation, and Energy Act of 2008: A Look at What's New for Forestry and Agroforestry

Larry Godsey, MU Center for Agroforestry

With all the other issues that have been filling up our newspapers over the past year, it's no wonder that the 2008 Farm Bill received very little attention. The Food, Conservation, and Energy Act of 2008 follows the same path as the previous Farm Bill by emphasizing the Environmental Quality Incentives Program (EQIP) as a primary means to provide financial and technical assistance to farmers and ranchers who adopt conservation practices. EQIP provides financial incentives to producers to promote both agricultural production and environmental quality.

EQIP is not a new program and has changed considerably since its inception. According to the USDA NRCS Farm Bill Web site, the 2008 Farm Bill "clarifies EQIP purposes to include forest management and energy conservation, as well as practices related to organic production and fuels management." National priorities for EQIP funding are still focused on grazing lands including animal waste systems. From a forestry perspective, the most significant change to the EQIP program is the requirement that a forest management plan is needed when the EQIP contract includes forest stand improvement, forest trails and landings, or forest slash treatment. Cost share is now available for the professional development of forest plans through a technical service provider (TSP).

The 2008 Farm Bill established two new programs that will have a dramatic impact on forest management. The Conservation Stewardship Program (CSP) is a program that will pay a calculated rate per acre to a landowner for conservation practices that are currently established and for proposed conservation practices. To be eligible, a landown-

er must fill out an application identifying what practices are currently established on their farm and what practices they plan to establish in the future. The application is then ranked along with other landowners in the same land use category (for example, forest landowners are ranked with other forest landowners). The CSP is a five-year contractual arrangement with NRCS and the payment made to the landowner is based on their environmental ranking. The CSP program has a continuous sign-up, so landowners may apply at any time during the year.

Another new program that was established by the 2008 Farm Bill is the Biomass Crop Assistance Program (BCAP). The BCAP has two main provisions. The first provision pays a 75 percent cost share to landowners for the establishment of a biomass crop. This biomass crop can either be herbaceous or woody; however, in either case a management plan must be established. The second provision pays a dollar for dollar match to producers on a dry weight basis for biomass sold. For example, if a biomass producer sells biomass to the local utility company at \$20 per ton, the BCAP program will also pay that producer \$20 per ton. The maximum match through the BCAP program is \$45 per ton, and the producer can only sell to an approved facility as identified by the USDA Farm Service Agency. **GH**

For more information regarding the 2008 Farm Bill, contact your local USDA NRCS office. For more specific questions regarding forestry provisions of the 2008 Farm Bill, contact Doug Wallace, NRCS State Forester, (573) 876-0908.

PRESERVING THE FAMILY FOREST

We had originally scheduled the next installment of the Dogwood Family Case Study to appear in this issue. However, due to the recent death of author Kirk Fine's father, it will appear next quarter. On behalf of all our Green Horizons readers, Michelle and I would like to extend our condolences to Kirk and his family, and look forward to his return.

RENEWABLE ENERGY COMING TO PERRYVILLE

LG Biomass Missouri LLC recently announced its intent to develop a 32 megawatt biomass power generation facility that will use forest and agricultural waste and by-products to create renewable electric energy. To learn more, check out the article that appeared in Perry County's Republic-Monitor, <http://www.perryvillenews.com/>

Jim Zwyers is Logger of the Year

Jim Low, Missouri Department of Conservation

Getting the most value from a stand of timber while ensuring the future productivity of the land is a challenge that Missouri's 2009 Logger of the Year takes seriously.

Jim Zwyers, O'Fallon, received the Missouri Department of Conservation's top honor for timber harvesters July 25. State Forester Lisa Allen presented the award at the annual meeting of the Missouri Forest Products Association.

To receive this honor, a logger must be nominated by a professional, degree-holding forester. Zwyers' performance was so remarkable that he received nominations from foresters in two districts.

St. Louis Region Forestry Resource Technician Jeff Bakameyer nominated Zwyers in part because he considers him "a man of good character and high integrity.

"When he gives you his word, you can take it to the bank," said Bakameyer. "He treats all of the land he works on, whether it is private property or public land, like it is his own and gives it the respect it deserves."

As an example, Bakameyer cited an instance where Zwyers was harvesting timber for a private landowner in St. Charles County and noticed that the land had a developing maple tree invasion. Under certain circumstances, maples can take over commercial forestland, providing fewer benefits for wildlife than the oak trees that previously grew there.

"Jim knew the landowner wanted to manage his land properly so he took the initiative to tell the owner about the downside of having maples everywhere," Bakameyer said. "He even told him that the Conservation Department might be able to help him pay for treating the maples. Later, he called me to be sure who the landowner should talk to for help. When we have loggers in our area preaching about the evils of maple, it almost brings a tear to my eye."

Central Region Resource Forester Josh Stevens shares Bakameyer's admiration for Zwyers' commitment to



State Forester Lisa Allen presented the 2009 Logger of the Year Award to Jim Zwyers of O'Fallon. (Missouri Department of Conservation photo)

customer service. He is equally impressed with business savvy that not only improves his and his customers' bottom lines but makes better forest management possible.

"Jim cuts small diameter trees and large diameter," said Stevens. "He sorts the logs and sells to the highest bidder, whether it be stave, veneer, pallet or firewood. He realized that being in the firewood business gave him a competitive advantage for small and defective timber.

He bought a feller-buncher (an expensive piece of equipment that rapidly cuts and gathers several trees at a time) that he now uses for timber sales and timber-stand-improvement cuts at the same time. What is just as impressive is the lack of damage to soils and trees in a stand where he has worked with the feller-buncher. He gets every bit of value for the timber owner, while improving his own bottom line and protecting the resource."

Stevens also noted a case where Zwyers helped a fellow logger who was injured on the job. "He stepped in and handled many of the other logger's projects until he recovered. This is just another example of Jim's selfless ethic," said Stevens.

Logger of the Year Award recipients receive a framed certificate and a Stihl chainsaw. Candidates for the Logger of the Year Award must have completed the Professional Timber Harvester's Training Program sponsored by the Missouri Forest Products Association and be current with the qualifications or equivalent training.

Candidates must be operating in Missouri and practicing sustainable forest management, have good forest-product utilization and follow best management practices. They must have low residual tree damage on their harvests and practice safe work habits, preferably using all available safety equipment. They must have no recent complaints or issues working with landowners and foresters on timber sales. The award honors "the best of the best" in the logging industry. **GH**

Arbor Day Poster Contest Open to All 5th-Grade Students

Jim Mitchell, Missouri Community Forestry Council

“Trees Are Terrific... and Energy Wise!” is the theme of this year’s National Arbor Day Poster Contest for all 5th grade students; public, private, or homeschooled. The contest is sponsored by the National Arbor Day Foundation, and supported locally by the Missouri Community Forestry Council, Missouri Department of Conservation, and Forest ReLeaf of Missouri.

Be sure to follow the contest rules as outlined here and also in the Activities Guide. Teachers can download the guide (which also includes lesson plans) at www.arborday.org/kids/postercontest

Each school must pick one poster to represent the school.

Teachers can choose the time that best fits their classroom schedule to have students do the exercises and draw the posters. It can be a fall or winter project. But, the school’s winning poster must be submitted no later than Feb. 11, 2010.

Posters should be sent to:

*Donna Baldwin
Poster Contest Coordinator
Missouri Department of Conservation
P.O. Box 180
Jefferson City, MO 65102*

The posters will be judged in March at the Missouri Community Forestry Annual Conferences. The winner’s teacher will be notified immediately.

All teachers who send in their school’s winning poster will receive educational posters and materials for the classroom and Arbor Day pencils to present to each student who drew a poster.

The student who wins the state contest will receive:

- \$50 savings bond from Forest ReLeaf of Missouri.
- Commemorative tree that will be planted on the school grounds or public property in the winner’s community.
- Framed certificate honoring their achievement.
- Invitation to attend Governor Jay Nixon’s signing of the Missouri Arbor Day Proclamation at the State Capitol in Jefferson City.

The teacher of the state winner will receive:

- Educational resource materials from the National Arbor Day Foundation.
- The Department of Conservation’s 400-page book *Trees of Missouri*.
- Many other nice prizes. **GH**

CONTEST RULES

- All entries must be original artwork created by a student currently in the 5th grade.
- A student may enter the contest only once.
- The student’s first and last name must be written or signed in the lower right-hand corner on the front of the poster.
- Entries must be no smaller than 8 ½” x 11” and no larger than 14” x 18”.
- Artwork may be done in marker, crayon, watercolor, ink, acrylic, colored pencil or tempera paint.
- Computer or photo generated art and/or printing is NOT acceptable.
- Collages are NOT acceptable.
- Do NOT glue anything on the poster.
- Entries must be done on paper that will allow for duplication, display and framing.
- The poster must be related to the contest theme.
- The theme *Trees are Terrific... and Energy Wise!* must be on the poster and spelled correctly. **MAKE IT STAND OUT!!**
- Avoid use of business names or logos.
- Teacher must complete the School Winner Report Form (found in the Activities Guide) and attach it to the back of the poster (this is the ONLY item that can be attached to the poster).
- Entries must be mailed flat and should not be matted, mounted, laminated, framed or folded.

The Back Page

Deadlines for Newsletter Submissions

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

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

The Bid Box Remains on Holiday

Stumpage prices seem to be playing limbo: How low can they go?! The economy (or lack thereof) and the 'wall of wood' coming from Ozark salvage operations are wreaking havoc on stumpage prices. That's not to say all species are in the tank. Best advice? Contact your professional forester for up-to-date market conditions in your area.

E-mail or Snail Mail?

Would you rather receive Green Horizons electronically? E-mail us at hallmich@missouri.edu or stelzerh@missouri.edu and we will add you to our listserv. Be sure and send your full name and address so we can take you off the snail mail list.

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UNIVERSITY OF MISSOURI Extension

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Calendar of Events

Oct. 17, 2009: Seventh Annual Missouri Chestnut Roast, New Franklin, Mo. For more information, go to <http://www.centerforagroforestry.org/events/chestnut/index.asp>

Oct. 23-24, 2009: Shannondale Tree Farm Anniversary Ceremony, Shannon County, Mo. Honoring the 60th anniversary of the Shannondale Tree Farm, the oldest continuously owned Tree Farm in Missouri. For more details, go to <http://www.moforest.org/education/treefarm.html>

Nov. 3-4, 2009: Thousand Cankers of Black Walnut National Conference, St. Louis, Mo., Doubletree Hotel at Westport. For more details or to register, contact Bonnie Russell, MO Dept of Agriculture, (573) 522-1109.

Feb. 6, 2010: Missouri Nut Growers Annual Meeting and Nut Show, Nevada, Mo. The Missouri Nut Growers will meet at the Nevada Community Center, 200 N. Ash, Nevada, Mo.