

Land Air & Water

Kentucky Energy and Environment Cabinet

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Land Air & Water

since 1988

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Biomass Task Force makes recommendations to develop new industry in Kentucky

An executive task force formed by Gov. Steve Beshear has forwarded to the governor its recommendations for advancing the discussion on the development of a biomass and biofuels industry in Kentucky. A report from the 22-member group lists five key recommendations that can create a viable alternative energy industry for the Commonwealth.

“The development of a biomass and biofuels industry is certainly promising, and I will take the recommendations under advisement,” said Gov. Beshear. “The task force estimates that biomass production and processing can generate up to \$3.4 billion of net output annually along with 10,000 jobs, much of which will be concentrated within rural communities statewide. That is a plus for everyone in Kentucky.”

The five recommendations are:

1. The Division of Biofuels within the Energy and Environment Cabinet will serve as a single agency point to coordinate and facilitate biomass and biofuels development statewide. The Division of Biofuels must be fully integrated with the Governor’s Office of Agricultural Policy, Department of Agriculture, the Cabinet for Economic Development and Division of Forestry, whether by formal or informal structure, to facilitate the merger of the biomass provisions of Kentucky’s strategic plan for energy and its strategic plan for agriculture into a Roadmap for Biomass Development to 2025.
2. A Kentucky-specific Renewable and Efficiency Portfolio Standard be mandated that will provide significant opportunities for biomass and job development in Kentucky.
3. The Division of Biofuels will publish analyses and summary findings identifying current biomass development and technology within the Commonwealth, along with demand projected from developing technologies and mandates.
4. The Division of Biofuels, in collaboration with stakeholder groups, will facilitate development of a Kentucky Standard for Biomass Sustainability.
5. The Governor’s Office of Agricultural Policy and the Energy and Environment Cabinet will assess public opinion of funding mechanisms that foster the development of biomass production and that stimulate the development of a biomass-based liquid fuel and power industry.

“While the task force recognizes that some of the recommendations depend upon the economic health of Kentucky, we firmly believe that we must move forward in finding and developing viable alternative energy resources,” said task force co-chair Len Peters, secretary of the Energy and Environment Cabinet. “This work product will be a guideline and roadmap to making that happen.”

Much of what appears in the report relies on collaborate efforts among several state agencies as well as the private sector.

The report will be forwarded to leadership in the Kentucky General Assembly for review and comment. A copy of the full report will be available online at www.energy.ky.gov/biomass

Visit Land, Air & Water online at <http://www.eec.ky.gov>

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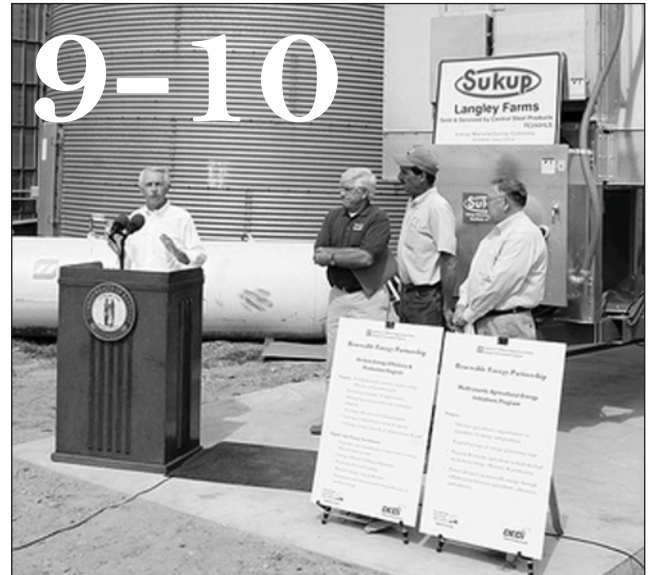
Kentucky is using its stimulus money to achieve energy efficiency and develop renewable energy resources to further the goals of the governor's energy strategy.

The native pawpaw tree 13

The Division of Forestry and Kentucky State University have teamed up to offer high-quality pawpaw seedlings.

Sky-high inspections 14

A state helicopter crew covers more ground during surface mine inspections and provides ease of photography and video to ensure the environment is protected against adverse practices.



Our Cover

The January ice storm of 2009 left this raspberry vine encased in a sparkling cocoon. Photograph by Merle Wasson of Paris, Kentucky.

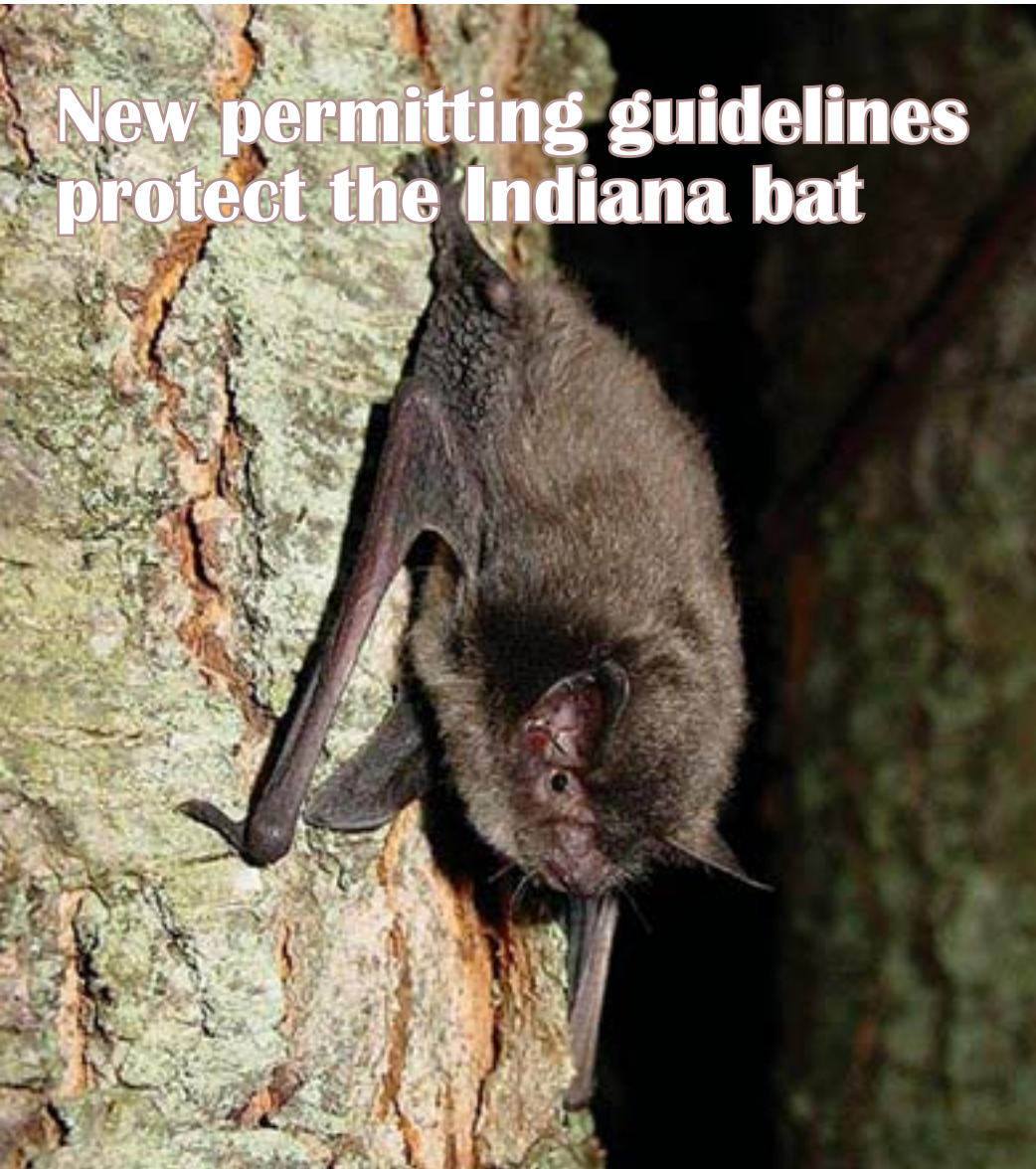


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New permitting guidelines protect the Indiana bat



The Indiana bat is about the same size as a mouse, with fur that varies from black to light brown, but the overall color is dull gray.

Photos courtesy of the Department of the Interior and the University of Michigan Museum of Zoology.

Kentucky begins measures to reduce negative impacts of mining to bat habitat

**By Evan Satterwhite and Linda Potter
Department for Natural Resources**

In 1967, the Indiana bat (*Myotis sodalis*), became the newest addition to the federal endangered species list. Once numbering in the millions, scientists estimate their current population at around 457,000. Historical causes of population decline in the Indiana bat are mainly the result of man's activities. Because the Indiana bat migrates between summer and winter, it faces threats specific to each area.

During the winter, human disturbance to hibernating bats has been a primary cause of decline. A single cave or abandoned mine can be the winter home (or hibernacula) for tens of thousands of bats, thus disturbing one area can have serious consequences. In the summer, stream channelization, deforestation and agricultural development have historically been the greatest threats since this is the time that females establish their colonies underneath the loose tree bark and bear their young just before returning to their caves in the fall.

Being listed as endangered or threatened is not necessarily a death sentence. Many animals, such as the bald eagle and the American alligator, once hovered on the brink of extinction, but are now recovering. Landowners' actions and activities can help the bats recover, but changes in regulations for surface mining in Kentucky and other states will also further preserve their habitat.

The Kentucky Division of Mine Permits recently implemented new regulations that identify the habitat of the Indiana bat and provide protective measures to minimize the negative impact of mining on the survival rate of the species.

Dr. Richard Wahrer, an environmental scientist with the Kentucky Department for Natural Resources, was recently appointed to a team of national experts and

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Dr. Steve Higgins (far left) of the University of Kentucky discusses the design, management and results of his research with members of the Agriculture Water Quality Authority (left to right): Steve Coleman, chairman; David Rowlett, KACD representative; Kevin Jeffries, farmer at large; Pete Goodmann, Division of Water assistant director; Tim Hughes, Governor's Office of Agriculture Policy; Bob Wade Jr., vice chairman. Photos provided by Amanda Gumbert

Dead animal composting research yields startling results

By Steve Coleman, Division of Conservation, in collaboration with Carol Spence, University of Kentucky College of Agriculture

The U.S. Food and Drug Administration (FDA) recently released a new set of regulations concerning the disposal of livestock carcasses. As a result, the University of Kentucky (UK) College of Agriculture, in partnership with the Kentucky Office of State Veterinarian and the Kentucky Agriculture Water Quality Authority, is working to develop a new practice standard for disposal.

“When farmers are developing their agriculture water quality plans, one of the things that they have to deal with is dead animal disposal,” said Amanda Gumbert, water quality liaison with the UK Cooperative Extension Service. Gumbert encourages partnerships and information sharing between the Kentucky Division of Conservation and UK. She is currently working with Dr. Steve Higgins of the Kentucky Agricultural Experiment Station; the Kentucky Agriculture Water Quality Authority; and the Division of Conservation to develop a new practice standard, including clear information about composting as an option for disposing of carcasses.

Examples of windrow composting at the Kentucky Agricultural Experiment Station in Woodford County.

“In the (current) state statute, composting is an option for disposal, but there have been permitting issues before,” Gumbert said. “The language is somewhat confusing as to what is legal and what is not. What we’re trying to do is get people away from throwing dead animals into sinkholes or dragging them out to the “back 40” and leaving them where they could create water quality problems.”

An option that many farmers used, carcass pick-up services, have gradually disappeared in recent years because the stricter FDA regulations make them less cost-effective alternatives. The Division of Conservation and the Governor’s Office of

Agriculture Policy are currently partnering to assist in some county pick-up services, but those are temporary solutions.

“We had this huge issue of what are we going to do with the 80 million pounds of beef carcasses that were being picked up around the state annually,” said Higgins. “We’re demonstrating composting as a viable alternative.”

Higgins has a method for composting dead farm animals that safely breaks down the carcass while keeping pollutants out of the groundwater. It’s an odorless process that won’t attract scavengers and also provides an end product that could be used as compost for crops, if the farmer desired.

With approval of the Kentucky Office of State Veterinarian, Higgins set up a site at the Kentucky Agricultural Experiment Station in Woodford County to demonstrate two composting systems—bin and windrow.

“Windrow and bin composting are basically a ‘composting for dummies’ technology,” Higgins said, drawing a parallel to the series of books with similar names. “It’s hard to mess it up. Bin systems work really well for small animals such as hogs and chickens. When you get into large animals, more than 1,000 pounds, a

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West Irvine Elementary students understand the importance of recycling

Club teaches students to be environmental stewards

Article and photography by Ricki Gardenhire
Office of Communications and Public Outreach

Charlotte Arvin, a fourth-grade teacher at West Irvine Elementary in Estill County, believes that when students come up with a good idea it's best to let them see it through implementation.

"Last year, we were discussing possible after-school clubs with our students and they talked about starting a club that would be dedicated to helping the environment," said Arvin. "The Green Club is student-driven; they decide the projects to complete. They have undertaken a massive recycling program for our school and worked with county officials to put it into action."

The students partnered with the Estill County government to obtain recycling bins for their classrooms, and use of a trailer for collecting and sorting the recycling commodities. About every two weeks, the county road department picks up the trailer and takes the recyclables to the county-owned recycling center for further sorting. The commodities are trans-

ported to the Bluegrass Regional Recycling Center in Richmond to sell as part of a cooperative marketing agreement.

The students collect newspaper, plastic, aluminum, cardboard and paper.

Kim Dawes, solid waste coordinator for Estill County, said the Green Club at West Irvine took off on its own. "I think it's wonderful that—at such a young age—they are working to make our world a better place."

Ten-year-old Bryonna Claypoole said the club is all about helping the environment. "It's our world, it's where we live. Plus, it's fun."

Jacob Abshear, a fourth-grader, says it's important to teach students to recycle at school so they'll recycle at home, too. "We have to be committed; the Earth needs to be clean."

West Irvine students also are on a mission to see how large an aluminum foil ball they can make; cafeteria workers are saving aluminum foil used in the kitchen

Charlotte Arvin (center) assists West Irvine Elementary Green Club students with their recycling duties. Above: (back row, left to right) Bryonna Claypoole, Taylor O'Hair (front row, left to right) Jacob Abshear, Michael Kirby.

and students are bringing in foil from home to add to the ball. They will recycle the ball at the end of the school year, and they've challenged a sister school to see who can create the largest foil ball.

Not just anyone can join; new members have to fill out applications to be a part of the program.

Kara VanWinkle, 11, said that she had to be a part of the club since day one. "When I heard about the Green Club, I knew that I had to join. We are helping the world, and it feels good to know that you are doing something good. It's awesome."

"If other kids are reading this, I'd tell them that if they know of something good to do and something that would make a difference, don't hesitate. Get out and find a way to do it."

With environmental clubs springing up in schools across the Commonwealth, young Kentuckians are learning to be environmental stewards and encouraging others to do the same.

A leader on the farm

UK's Spindletop excels in farm management

By Mary Jo Harrod
Division of Compliance Assistance



Dr. Steve Higgins, director of Environmental Compliance at the University of Kentucky's College of Agriculture (UK), is proud of what has been accomplished at the university's Spindletop Farm. For the farm's KY EXCEL project, the horse paddock area was renovated to demonstrate Agricultural Water Quality best management practices (BMPs).

The farm's once-large 20-horse paddock was renovated as a showcase for a variety of BMPs. This paddock that was divided by a stream had worn high-traffic areas around the creek, feeding buckets, running shed and gated areas where bare soil turned into dangerous mud during wet weather. Horses living on the farm had full access to the stream, destroying the vegetation and creating erosion. Erosion had formed a gully 4 feet deep and 25 feet wide. To alleviate these problems, a fenced riparian area, the bank area of a natural water stream, and a gated stream crossing were installed, creating two individual North and South paddocks that can now be managed in a rotational pattern. The rotational system allows one paddock recovery time while the other is in use.

BMPs, such as using fencing to exclude horses from the creek and installing a stream crossing with a hardened surface, improved the water quality by enhancing the stream corridor and protecting the natural stream course. To further enhance the riparian area, a fenced area of 30 to 50 feet on either side of the creek has been deemed a "no-mow" zone, invasive plants within the area were eradicated and native trees, such as white oak, birch, bur oak, persimmon and hickory, were planted within the protected buffer zone.

TOP LEFT: A shaded water tank is fed by a perennial spring, providing cool water for the horses to drink year-round.

TOP RIGHT: Fencing was constructed around the creek to prevent further erosion of the creek banks, and native trees were planted within the buffer zone.

ABOVE: One of two paddocks managed on a rotational pattern.

Photos provided by the UK College of Agriculture

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AML enhancement rule projects reduce hazards and help make mined lands useful once again



approximate original appearance by grading available topsoil and then planting grasses and ground covers. After projects are completed, hardwood tree seedlings are planted in the springtime on the reclaimed sites.

In March 2009, AML started one of its larger enhancement rule projects, the River Queen Slurry AML Enhancement Rule Reclamation Project at the Wendell H. Ford Regional Training Center, a military installation in Muhlenberg County. According to State Command Sergeant Major Gregory D. Armstrong, AML and the Kentucky Department of Military Affairs have worked to-

gether to help identify, cleanup and reclaim coal refuse on the military reservation since the early 1980s.

“The Wendell Ford Training Center will now be capable of supporting two army battalions simultaneously with state-of-the-art facilities utilizing more than 11,500 acres of post-mined land,” CMS Armstrong said.

AML enhancement rule projects are distinguished as winning environmental projects on many fronts—the removal of potential fire hazards and

sources of water pollution; offending physical problems, often eye-sores to local communities throughout the Commonwealth, are eliminated; project areas are made suitable for outdoor activities and/or productive use; trees are planted on sites providing numerous land, air and water quality improvements and recycled coal refuse provides a source of valuable energy that does not require mining in-ground coal. Further, since reclamation costs are borne by contractors reprocessing refuse, government money is saved and may be redirected toward reclamation of additional AML problems.

“Projects such as these are another example of the Department for Natural Resource’s commitment to solving environmental and energy problems plaguing our Commonwealth by creatively partnering

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Land improvements and coal reprocessing among the many benefits

TOP: Octavia Church prior to reclamation showing the toe of the refuse pile. Note steepness of the pile on right side of photo.

ABOVE LEFT: Existing coal waste dump during excavation and removal of waste material.

ABOVE RIGHT: Octavia Church following removal of coal waste and revegetation.

Photos provided by AML

By **Corey Ann Howard**
Division of Abandoned Mine Lands

A special program designed to supplement the Kentucky Division of Abandoned Mine Lands (AML) existing restoration projects is having a positive impact on communities throughout Kentucky.

AML enhancement rule projects are a special type of reclamation project focused on reclaiming abandoned mine lands that, otherwise, have little likelihood of being reclaimed. These projects allow AML contractors to remove coal from abandoned mine sites and to sell reprocessed coal in order to offset costs of projects. Usually, coal refuse is dry-excavated and mixed with water into slurry, or dredged out wet and hauled to coal processing facilities for recovery. Abandoned mine sites are then restored to their

Only the finest for Ohio County



Excavation at the site to prepare for construction of the Ohio County plant expected to be completed in spring 2011.

Photo by Tetra Tech Inc.

Construction begins on state-of-the-art plant

**By Alison Simpson
Division of Water**

Ohio County has embarked on a project to build its own state-of-the-art water treatment plant that, when complete, will produce some of the finest drinking water in Kentucky.

That's par for the course for this western Kentucky county that has been chosen as one of America's 100 Best Communities for Young People by America's Promise Alliance (www.americaspromise.org) and is the birthplace of Bill Monroe, who is considered to be the father of Bluegrass music.

The new water treatment plant will have the capacity of producing 4 million gallons per day (MGD), double that of their current facility, and will replace an existing 2 MGD plant. It will also eliminate the need for treated water currently supplied by a local poultry processing facility when the contract expires next year.

Project consultant Sheryl Chino of the Green River Area Development District explains how the county arrived at the decision to build its own plant.

"In 1996, Perdue Farms built a plant in Ohio County. It included a water plant as well as a manufacturing plant. They made a deal that Perdue would furnish 1 million gallons per day of water to Ohio County free of charge until 2009," said Chino. "Our needs at that point exceeded what our 2-MGD plant could produce. So when the contract was close to running out, we realized we would have to

build a new plant."

Walter Beasley, general manager of the Ohio County Water District, said the plant's treatment technology includes ultra membrane filtration, in which the water is pressured through membranes to produce high-quality water.

"A lot of places are going to these because it does such a good job," said Beasley. "It filters out particles smaller than the eye can see, even viruses.

That's a big benefit. We'll have some of the best water quality in Kentucky."

Consulting engineer Dan Shoemaker of Tetra Tech added that the new plant also includes granular activated carbon contactors—a process that is fairly new for Kentucky plants. This process prevents the creation of undesirable byproducts that result when dissolved contaminants react with disinfectants.

Project planners estimated that the new plant would come in at close to \$15 million. When it was put out for bids in August 2008, the bids came in over budget and pushed the project cost up to \$20 million—an excessive amount for the county during troubled economic times. As a result, they conducted a post-bid value engineering process led by J.R. Wauford Consulting Engineers. Tetra Tech subsequently redesigned the plant, incorporating some of the value engineering findings but retaining the membrane filtration and granular activated carbon treatment processes.

"If it had come back in at a higher cost, we would have gone back to conventional treatment," said Beasley. "However, after the re-bid in May 2009, the bids came in more favorable reducing the project cost to \$14 million. That allowed us to stay with the membrane and carbon treatment."

The plant is expected to be completed by spring 2011. Perdue has agreed to supply the water at a reasonable cost until the plant comes online.

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Only the finest for Ohio County *Continued from Page 6*



secured with the help of Shoemaker at Tetra Tech.

“He helped get all the funding together. EDA’s Bob Hunter and the people at RD have graciously been willing to do their part to help us achieve those grants,” he said.

Beasley said that the funding process for the plant went smoothly.

“We had no problems,” he said. “It was a long lengthy paper trail—as it is with all funding. But the funding is the reason we were able to keep our rates so low.”

Excavation of the clearwell structure. Photo provided by Tetra Tech Inc.

The new plant will serve about 85 percent of Ohio County, a large portion of southern Daviess County and approximately 100 customers in Breckinridge County. The plant will also have a connection to sell to Grayson, north McLean and Butler counties in the event of an emergency in any of those counties. Beasley estimates the population of the service area is 23,000 to 25,000.

The project includes construction of the water treatment plant, upgrading of the raw water intake structure, conversion of an existing treated water main to transport raw water and the addition of a new section of treated water transmission main.

The community’s response to the new water treatment plant project has been very good, said Beasley.

“The best response is that we’re getting by with a 6 percent increase on our rates, which is fabulous,” he said. “The public is really pleased with the rate only going up that much versus something like 10 to 15 percent.”

Funding for the project, including debt restructuring, totals \$20,698,500. Funding sources include the Clean Water State Revolving Fund loan, a grant from the Economic Development Administration (EDA), a grant and loan from Rural Development (RD), funds from the Green River Regional Industrial Development Authority (GRRIDA), a House Bill 608 grant and local funds from the water district. In addition, the Ohio County Fiscal Court and GRRIDA have agreed to pay a portion of the new debt service.

Harry Storm, Ohio County Water District chairman, said that the funding was

Dead animal composting research yields startling results

Continued from Page 2

windrow system works best because you’ve got more open area.”

At present, the state requires that an animal weighing more than 300 pounds be quartered before disposal. Higgins says that can turn farmers away from practicing safe on-farm methods. For that reason, he demonstrates how to do whole carcasses in an open-air facility that doesn’t require a lot of capital to install.

The UK demonstration site uses a water quality best management practice of soil cement for its flooring. It’s less expensive than concrete and just as impermeable.

Once the required flooring is installed, the rest of the process is easy and inexpensive, according to Higgins. First, he lays 2 feet of wood mulch or some type of carbon source on the base of the bin or windrow. The entire carcass is rested on top of the mulch bed and covered with more wood mulch—at least 3 or 4 feet for a large animal.

“The slope of the pile will give you about 2 feet minimum on the sides covering up the carcass. Nothing can be exposed; completely cover the animal,” Higgins said.

This method prevents odors from escaping the pile, so scavengers aren’t attracted to the hidden remains. The pile will quickly heat up to about 160 degrees Fahrenheit, and within five to six weeks, nothing but a few bones will remain.

The resulting compost can be spread on fields or used to compost future downed stock, which is the method Higgins prefers. Each succeeding use of the material results in faster composting because the base is already inoculated with a healthy population of beneficial microbes.

Some farmers might be concerned that by composting an animal that died of an illness, they will be inoculating their farm with that disease. Higgins said that won’t happen. “Any disease-causing pathogens are destroyed by beneficial bacteria and by the heat that’s generated in the composting process,” he said.

Higgins and Gumbert believe that this is a viable solution for the disposal of dead animals.

“It’s controlled, it’s managed and it takes care of a lot of water quality concerns,” Higgins said. “We see opportunities for multiple counties to partner on a regional composting facility, or farmers can develop this practice on their own as part of their agriculture water quality plans.”

Kentucky Department for Energy Development and Independence receives stimulus funds for statewide energy efficiency and renewable energy programs

By Brooke Smith

Department for Energy Development and Independence

Energy—in the past decade it has been the topic on everyone’s mind. No matter where you turn, energy independence is at the forefront of public discussion. With the threat of global climate change, the question is always the same: how can our country’s energy needs be met in the cleanest, cheapest and fastest way possible?

This is a question Gov. Steve Beshear and the state of Kentucky have taken very seriously. In late 2008 Gov. Beshear released a strategic plan for Kentucky’s energy policy. The plan, *Intelligent Energy Choices for Kentucky’s Future*, was created to improve the quality and security of life for all Kentuckians by creating efficient, sustainable energy solutions and strategies, by protecting the environment, and by creating a base for strong economic growth over the long term. A major goal of the governor’s plan is to assist Kentuckians in increasing energy efficiency in all sectors of our economy.



Kentucky stimulus dollars at work

The passage of the American Recovery and Reinvestment Act (ARRA) of 2009, also known as the “stimulus plan,” presented a huge opportunity to begin implementation of key elements of the governor’s energy strategy. In mid-2009 Gov. Beshear announced that the Commonwealth would receive more than \$68 million in funding through the Department of Energy (DOE) to enhance and develop energy efficiency and renewable energy programs across the state. These programs are managed through the Department for Energy Development and Independence (DEDI) within the Energy and Environment Cabinet (EEC). Funding for the programs will provide support through March 2012.

The goal behind ARRA funding is to enhance energy independence, expand educational opportunities and stimulate local economies for the creation of “green collar” jobs. As of November 2009, the Kentucky DEDI has used ARRA funding, coupled with funds from an Energy Efficiency and Conservation Block Grant, to create 735 jobs across the state and enabled energy savings of 2,950,586 million BTU’s (British Thermal Units) (see chart on Page 10).

“Becoming energy efficient in our homes, schools and businesses is one of the easiest ways for Kentucky to not only save money on energy costs, but to begin addressing how we impact our environment,” said Gov. Beshear. “We have a number of renewable energy resource possibilities in our Commonwealth,

and this funding will help us achieve the goals of energy efficiency and developing renewable energy sources.”

The following provides a snapshot, by sector, of how these ARRA dollars will be utilized to further the goals of the governor’s energy strategy.

Schools and Education

Kentucky Net-Zero Energy Schools (\$1,422,588)

As schools become more energy efficient, it becomes more feasible to consider utilization of solar to meet the energy demands of the facility. Several schools are pushing energy efficiency levels below 30,000 BTU’s per square foot per year, providing an opportunity to introduce the first net-zero energy school to Kentucky. This funding provides partial match for one or more schools to install solar thermal or photovoltaic systems sufficient to bring the school to net-zero or near net-zero energy use. Schools compete for this funding and must have a design that is sufficiently efficient to allow a solar system to make up the remaining energy needs of the school.

Kentucky Green and Healthy Schools Program (GHS) (\$214,800)

GHS is a statewide, web-based and student-centered program that empowers students and staff to move their school toward becoming safer, healthier and more environmentally sustainable.

This program helps close the achievement gap while simultaneously using the environment as an integrated learning context. All grade levels of existing schools, and even those in the process of being built, are invited to join GHS. For more information visit <http://www.greenschools.ky.gov/>

Kentucky Energy Efficiency Program for Schools (KEEPS) (\$4,758,588)

KEEPS helps Kentucky school districts reduce energy consumption and lower operating expenses. The funding will provide support for the 174 districts by expanding the existing KEEPS program managed by the University of Louisville’s Kentucky Pollution Prevention Center (KPPC). For more information visit <https://louisville.edu/kppc/keeps>

Kentucky Energy Efficiency Program for School (KEEPS) Energy Managers (\$5,050,012)

This additional funding will provide stipends to Kentucky K-12 public school districts to support district-based energy program managers. The ultimate goal is to reduce annual building energy consumption by at least 10 percent.

Kentucky National Energy Education Development Project (NEED) (\$1,000,000)

Kentucky NEED focuses on the scientific concepts of energy and provides objective, grade-appropriate information about conventional and emerging energy sources—their use and impact on the environment, economy and society. NEED provides curriculum-based approaches to improving energy efficiency in schools. For more information visit <http://www.need.org/>.

State Government Buildings

High-Performance State Government Buildings (\$18,920,579)

Funds are used to purchase hardware and software for building management systems for facilities owned by the Kentucky Finance and Administration Cabinet, to hire additional staff to triple Energy Savings Performance Contract (ESPC) activity, and to evaluate 814 buildings as candidates for ESPCs. Funding also supports the state Green Bank revolving loan fund that will finance energy efficiency and renewable energy upgrades in government buildings. For more information visit <http://finance.ky.gov/greenbank/>

OPPOSITE PAGE: Gov. Steve Beshear announces the ARRA Kentucky On-Farm Energy Efficiency and Production Program on the farm of Doug Langley in Shelby County.

THIS PAGE TOP: First Lady Jane Beshear presents a certificate of recognition from the governor to students at Southern Elementary School in Scott County for earning the ENERGY STAR. Photos provided by DEDI

RIGHT: This chart shows the number of jobs created and energy saved using ARRA funds designated for Kentucky.



Commercial Office Building Retrofit Showcase (\$3,500,000)

Provides for the purchase and installation of commercially available energy efficiency or renewable energy equipment and materials, including reasonable design costs, for the retrofit of a state government building to deliver a state-of-the-art advanced battery strategic planning facility. Such a facility may demonstrate energy efficiency and renewable energy techniques and technologies that will drive the facility toward net-zero energy usage by using applications of solar, geothermal heating and cooling, building envelop design, and window construction.

Agricultural Community

Farm Energy Efficiency and Renewable Energy Partnership (\$1,000,000)

The EEC partners with the Governor’s Office of Agricultural Policy to implement an On-Farm Energy Efficiency and Renewable Energy Program, whereas recovery funding is used to supplement tobacco settlement funding to provide grants to farmers for on-farm energy efficiency or renewable energy improvements.

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Recovery Programs at Work

Program	Grant Allocation	Jobs Created	Energy Saved (mmBtus)
Kentucky State Energy Program - ARRA	\$52,533,000	598	2438,948
Energy Efficiency and Conservation Block Grant Program (EECBG)	\$10,427,000	93	478,506
Kentucky Program for Industrial Energy Efficiency - Save Energy Now	\$349,976	*	*
Kentucky Energy Efficient Appliance Rebate Program - SEEARP	\$4,096,000	42	33,132
Enhancing State Government Energy Assurance Capabilities and Planning for Smart Grid Resiliency	\$591,715	2	0
Total	\$67,997,691	735	2,950,586

*Metrics not available at time of publication

Kentucky stimulus dollars at work *Continued from Page 10*

Kentucky Multi-County Collaborative Agricultural Energy Initiatives Program (\$1,000,000)

This program, also in partnership with the Governor's Office of Agricultural Policy, will encourage regional collaborative solutions to encourage energy efficiency and renewable energy. Kentucky farmers may use grant funds to pay for professional services or equipment, expand renewable energy crop production or prepare the grant application, opening the door to increased funding opportunities. Funding is provided in each of Kentucky's 120 counties. For more information visit <http://agpolicy.ky.gov/>

Residential Home Performance with ENERGY STAR (\$2,000,000)

Residential energy usage represents about one-third of Kentucky's energy use. Since homeowners frequently have trouble affording energy efficiency improvements, this grant will provide seed funding to help owners of existing homes install cost-effective energy efficiency improvements. The program will also encourage incentive programs with utility partners that help maintain a list of qualified contractors and provide a quality assurance service that verifies improvements have been properly installed. This program serves the population that doesn't qualify for low-income weatherization services. For more information visit http://www.energystar.gov/index.cfm?c=home_improvement.hm_improvement_hpwes.

Kentucky Department for Housing, Buildings and Construction Training (\$457,153) and Inspection (\$1,198,895)

This funding will provide education and training to local and state code enforcement officials responsible for residential and commercial building energy codes as well as funding for inspectors statewide to help achieve 90 percent compliance with new energy efficiency building codes within eight years.

Kentucky Energy Efficient Appliance Rebate Program (\$4,096,000)



Lee Colten (far right), with the Kentucky Department for Energy Development and Independence, presents a certificate of recognition to Bullitt County Freedom Elementary's receipt of the ENERGY STAR. Photo by DEDI

Kentucky has received funding for a rebate program that will begin in the spring of 2010. Consumers who purchase an eligible ENERGY STAR appliance may be eligible for a rebate. Many major appliance groups will be eligible, with larger rebates going to products providing the largest energy savings. For more information, go to www.energy.ky.gov

Industrial and Commercial Industrial/Commercial Sustainability Program (\$2,230,000)

This program, modeled after DOE's Industrial Assessment Centers, would increase funding for the University of Louisville's KPPC to perform energy analyses at industrial, commercial and institutional firms or organizations. The program would also conduct energy efficiency workshops for target groups. For more information visit <http://louisville.edu/kppc/e2>

Industrial Facility Retrofit Showcase (\$3,400,000)

The EEC is partnering with the Cabinet for Economic Development to provide energy efficiency and renewable energy

grants and incentives to industries relocating or expanding operations in Kentucky that create or retain "green jobs" while saving energy and reducing carbon emissions. Grants and incentives encourage programs and projects that introduce and demonstrate advanced energy savings and clean energy technologies in industrial and manufacturing facilities.

Energy Efficiency Battery Manufacturing Initiative (\$5,000,000)

The EEC is partnering with the National Alliance for Advanced Transportation Batteries (NAATBatt), a nonprofit consortium comprising more than 50 corporations and associations, to support the purchase and installation of commercially available energy efficiency and renewable energy equipment and materials, including reasonable design costs, for the construction of the advanced battery manufacturing facility to be built in Glendale, Ky. State-of-the-art energy saving and clean energy technologies incorporated into the facility will enhance its overall long-term

Continued to Page 15

A leader on the farm *Continued from Page 4*

The development of a fenced riparian area, while good for the health of the stream, denies water access to horses in the North paddock. To solve this problem, a perennial spring was developed to gravity-feed a water tank, providing an alternate water source. The spring is fenced off from the horses, and water is piped to a tank that sits in a shaded structure, which keeps the algae down and the water cool.

“The spring water stays at 57 degrees year-round, so the horses drink more,” says Higgins. “Consequently, the horses are healthier because animals have access to clean, cool water.”

Excess water is piped to the stream eliminating an unused, unsafe wet area that previously covered a large portion of the North paddock. The development of the spring was done in a manner that allows easy access and viewing for visitors of educational tours.

“As a result of the paddock renovation efforts, there has been a noticeable increase in stream bank stability, riparian



A large gully formed by high traffic near the stream was repaired and the area is now deemed a “no-mow” zone. Photo provided by the UK College of Agriculture

New KY EXCEL members

Several businesses, individuals, organizations and communities have elected to become environmental leaders by joining KY EXCEL, Kentucky’s voluntary environmental leadership program. These new members have committed to a variety of projects to improve and protect Kentucky’s environment that go beyond the environmental regulations. Call 1-800-926-8111 for more information or visit <http://www.dca.ky.gov/kyexcel/>.

Advocate

BA Engineers Inc., Louisville
Tracy Farmer Institute for Sustainability and the Environment, Lexington

Partner

East Kentucky Power Cooperative—J.K. Smith Power Station, Trapp
East Kentucky Power Cooperative—John Sherman Cooper Power Station, Burnside
East Kentucky Power Cooperative—William C. Dale Power Station, Winchester
East Kentucky Power Cooperative—H.L. Spurlock Power Station, Maysville
East Kentucky Power Cooperative Headquarters, Winchester

Master

Kentucky Utilities Co.—E.W. Brown Generating Station, Harrodsburg
Louisville Gas & Electric Co.—Muldraugh Station, Muldraugh

vegetation and an overall improvement to water quality due to fencing and access restriction,” explains Higgins. “The development of the North paddock took the longest, but the benefits are already evident. The rotational grazing is taking place, and the horses are utilizing the alternative watering source. Because of this, the South paddock is recovering from its extended use.”

The college has hosted several field day and demonstration events for county extension agents, students, the general public and equine producers. This site has been identified as a resource for education and outreach about agricultural water quality BMPs and visited by water quality professionals, as well as state and government officials from the southern region. The site has served as a demonstration site for both undergraduate and graduate-level students, as well as the UK Robinson Scholars.

Kentucky Division of Forestry
and Kentucky State University
team up to offer high-quality seedlings

the pawpaw



comeback

By Lynn Brammer
Division of Forestry

The pawpaw (*Asimina triloba*) is a small, understory tree with large leaves and banana-like fruit. Pawpaws are native to the eastern United States and grow wild throughout Kentucky where they are typically seen in shady, rich bottomlands. The pawpaw fruit is the largest edible fruit indigenous to North America and once they have ripened, they have a flavor comparable to mango, banana and pineapple. Although pawpaws—sometimes called “Indian bananas”—are largely left to foraging wildlife, they were once very important to Native Americans and early settlers.

At present, most pawpaw fruit is collected from wild stands or is produced in small orchards and sold at farmer’s markets for around \$3 per pound. Although commercial production of pawpaw in Kentucky is not common, there is a growing interest in producing the fruit as a high-value crop. A pawpaw research program at Kentucky State University (KSU) is one of the reasons for the renewed interest. Dr. Kirk Pomper, who has worked for more than 10 years to develop new pawpaw varieties with higher quality fruit, currently oversees the program. He and his staff direct their research at improving propagation methods,

Continued on Page 19



Making a comeback

TOP: The pawpaw tree produces the largest edible tree fruit native to the United States, reaching over 1 pound in size. Researchers at KSU are developing new varieties of pawpaw to improve market potential. The flavor of pawpaw makes them a desirable ingredient for ice cream, breads, pies and other dessert recipes.

Photo by Dr. Kirk Pomper, KSU

ABOVE LEFT: Myesha Hollins, KSU undergraduate student, looks at pawpaw fruit in the Pawpaw Patch at Cove Spring Park in Frankfort.

Photo by Jeremy Lowe

LEFT: Pawpaw flowers are thought to be self-incompatible and require cross pollination. Photo by Dr. Kirk Pomper

Over-flight program has over 20 years of enforcement experience

State-owned helicopter is unique management tool

By Evan Satterwhite
Department for Natural Resources

On a clear October morning at the Frankfort regional airport, photographer J. Hamon sets the cameras and his controls, while pilot Jim Drake warms the engine of the state-owned 1984 Bell long-ranger helicopter. This team has logged countless hours of flying over surface mine operations, averaging about 75 flights per year.

After testing the video equipment and donning the communications headset, Drake, a former military helicopter pilot, announces to the tower, “3KR ready to activate flight plan.” The controller responds, and Drake moves the controls to lift the helicopter above the blowing grasses and heads east.

History of the cabinet’s helicopter purchase

In the 1980s, the National Wildlife Federation sued the cabinet’s Department for Natural Resources alleging that



ABOVE: *Photographer J. Hamon (left) helps inspector Randy Smith into the helicopter as pilot Jim Drake (right) approaches.*



LEFT: *The crew flies over an active surface mine site during an over-flight inspection. Photos by DNR*

Kentucky was not fully complying with the Surface Mining Control and Reclamation Act (SMCRA) requirements to inspect surface coal mines. As a result of the settlement agreement, Kentucky received \$33 million in federal funding to create an agency that would provide direct oversight of reclamation and enforcement. That agency—the Division of Mine Reclamation and Enforcement—hired inspectors, purchased trucks and designed the Surface Mining Information System (SMIS) database to track permitting and enforcement activities throughout the state.

During early stages of implementation, the department soon realized that trucks could not adequately or quickly cover the large area of ground needed to meet the deadline of the settlement agree-

ment, which resulted in the purchase of the helicopter in 1988 for \$800,000.

For many years, video equipment was operated through an open window. Today, the video equipment and still cameras are mounted on the underside of the helicopter and operated by remote control from inside the cabin.

Flight plan for the day

“We are flying to Hazard to pick up our first inspector and fly over several jobs around the Hazard area,” said Hamon. “Then, we will travel to the London airport, pick up another inspector and go back to Hazard to pick up yet another.

Continued to Page 15

State-owned helicopter is unique management tool

Continued from Page 14

“The goal is to fly over 12 permitted surface mines, fill out the inspection forms, and record the condition of the sites in intricate detail. It’s going to be a full day of flying circles around these mines and examining the sites for possible infractions,” Hamon continues.

Each site is videotaped along with the addition of still photographs. The photographs are “geo-referenced” and over-laid in the mapping portion of SMIS back in Frankfort, showing their precise geographic location. Permit reviewers can then look at the still photos and determine whether an operator is off permit. The videos will be reviewed by mining inspectors in the regional offices.

Each over-flight counts as a partial inspection, which is required each month for every mine, in addition to regular- and full-inspection frequencies. After the over-flight and review of the videos, inspectors must “ground inspect” any infractions seen from the air before writing a noncompliance notice. Infractions seen from the air, but not from the ground, are referred to as “outcrops” because they are the outer edges of the surface mine permit that face heavily wooded areas. Further, the advantage of flight can more easily display the color of ponds below, indicating the amount of sediment and whether there is a need to clean out the structure. A lot of other indicators are used from the air to observe vegetation in the reclaimed areas, sedimentation, slides and other structural impoundments that need to be made.



J. Hamon operates the remote controls of the video and camera equipment to record images of surface mine sites throughout the state.

Photo by DNR

All in a day's work

Once refueled in Hazard, the team heads out to inspect its first of many permits that day. Just like a well-oiled machine, each member has his own duties to perform. The pilot—locating the mines from his GPS coordinates and expertly flying over the different shapes below, while minimizing aircraft movement for his passengers and video equipment; the inspector—using an eagle eye to detect any possible infraction and taking meticulous notes from his vantage point 2,000 feet above the ground; and the photographer—a steady hand at the controls of sophisticated video equipment.

As a team they work together, providing a tool for regulators to use in completing the difficult task of ensuring that the environment is not adversely impacted by mining operations.

The helicopter is a valuable tool, and the expertise of the employees involved provide a tremendous service to the Commonwealth.

Kentucky stimulus dollars at work

Continued from Page 11

success by reducing energy consumption and lowering operating costs. This program is currently in the planning phase.

Kentucky Program for Industrial Energy Efficiency – Save Energy Now (\$349,976)

This grant will support the University of Louisville’s KPPC to help businesses, industries and other organizations develop environmentally sustainable, cost-saving solutions for improved efficiency. The program will assist industrial facilities to achieve and sustain an annual reduction in energy intensity of 2.5 percent per year for an initial period of three years.

Local Governments

Kentucky Department for Local Government (DLG) (\$6,612,880)

Energy Efficiency and Conservation Block Grant funds will be available to units of local government that were not eligible to receive direct funding from the DOE. The EEC and DLG formed an agreement to help coordinate the development of a competitive grant application process and the distribution of funds. Eligible projects will include energy efficiency retrofits, renewable energy projects, energy audits and other measures.

Utilities

Utility Smart Grid Initiative (\$2,650,000)

Seed money is provided to establish a partnership with electric utilities to explore development of smart-grid concepts and their possible application in Kentucky, which has the potential to result in significant energy savings for ratepayers.

Enhancing State Government Energy Assurance Capabilities and Planning for Smart-Grid Resiliency (\$591,715)

This grant will strengthen and enhance state and local government energy assurance planning and energy system resiliency that will allow Kentucky to better prepare and respond to energy disruptions.

Program Administration

Department for Energy Development and Independence (DEDI) (\$2,544,505)

DEDI is adding administrative staff to address issues related to the oversight of Recovery Act funding.

AML enhancement rule projects *Continued from Page 5*

with agencies who share our goals,” added Commissioner Carl Campbell.

The Octavia Church Refuse Project, completed in 2006, is another example of AML’s enhancement rule work. This project consisted of reclaiming a coal refuse pile area that, due to its steep nature and constant erosion, threatened motorists on Pinson Fork Road, near Octavia Church in Pike County. The refuse pile also contributed to the acidic water quality of a nearby stream. Merchantable refuse was excavated from the project area outside of the stream bank and adjacent refuse piles above, and was delivered to an off-site processing facility. Upon removal of the refuse, the site was graded and revegetated to an approximate pre-mining condition. The project was deemed a success with a total of 5.8 acres reclaimed and substantial AML funding spared.

“AML worked diligently to eliminate the burdens of an old coal refuse pile negatively impacting the small community of McAndrews in eastern Kentucky. This project is one of several that demonstrate the positive results of AML’s enhancement rule projects,” said AML Director Steve Hohmann.

Kentucky’s AML program has built an impressive coalition of partners dedicated to abandoned mine land reclamation and restoration. Through the collaborative effort of private land owners, industry representatives, watershed groups, and federal, state, and local agencies approximately 360 acres of abandoned



View of River Queen on-site coal processing facility during reclamation.
Photo by AML

coal mine sites in Kentucky have been reclaimed as enhancement rule projects in Hopkins, Muhlenberg, Letcher and Pike counties, totaling \$5.6 million in state government financial savings. Project sites have been transformed into pasture, open space, wildlife habitat and recreational areas.

AML works throughout the coalfields of Kentucky to abate hazards to public health, safety and the environment from mining that occurred prior to 1982. More information about AML is available online at <http://www.aml.ky.gov/>

New permitting guidelines protect the Indiana bat *Continued from Page 1*

that has had a substantial impact on the Indiana bat and their survival. The team is comprised of members representing state and national regulators (RAs) in the areas of mining along with representatives from the U.S. Fish and Wildlife Service (FWS). The group is tasked with identifying the needs of the species through writing recommendations that would be reasonable and financially viable for the coal mining industry. The result is the *Wide-range Indiana Bat Protection and Enhancement Plan Guidelines*, which involves five primary steps designed to help mining applicants and regulatory agencies determine if an Indiana Bat Protection and Enhancement Plan (PEP) is required. If needed, the guidelines spell out the process of developing a PEP that meets both RA and FWS approval.

The five primary steps include:

- Step 1: Initial Habitat Information—a mining applicant will provide information to determine if there is suitable or potential habitat for the Indiana bat in the permit area.
- Step 2: Habitat Determination—regulators will review the information and determine the accuracy in habitat presence or absence.

- Step 3: Applicant Alternatives—mining applicants have three alternatives if a potential Indiana bat habitat exists. Impacts to a known habitat will require a PEP.

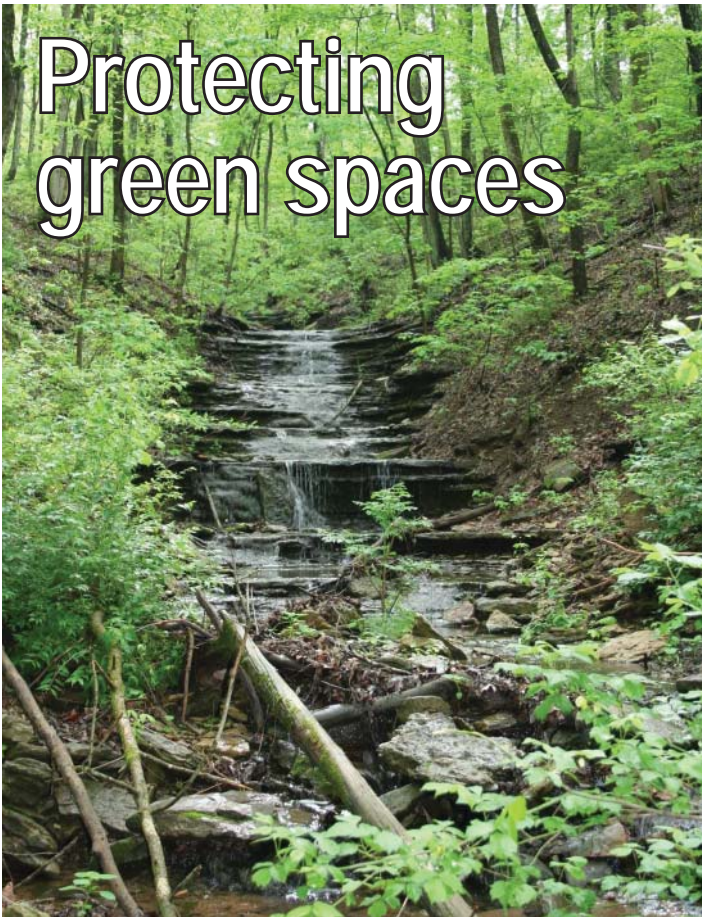
- Step 4: PEP Development and Implementation—PEPs are required if any part of the permit area contains known, or the potential for, Indiana bat habitat.

- Step 5: Agency Responsibilities/Oversight—state and national regulators monitor the implementation of the PEP.

The intent of the guidelines is to aid coal mining applicants and the regulatory community in understanding the options and protocols in implementation of the Surface Mining Control and Reclamation Act of 1977 as they relate to surface mining activities that may adversely affect the Indiana bat.

Dr. Wahrer has also written a Reclamation Advisory Memorandum that informs Kentucky coal operators about the new guidelines. He recently conducted training with the permit review staff and the coal industry to ensure a smooth transition. Kentucky became the first state to adopt the Indiana Bat guidelines into the coal permitting process on Oct. 1, 2009.

Protecting green spaces



Three nature license plates are available for an additional \$10 fee when you register your car, light truck or SUV—and the fee is tax deductible.

- Hummingbird
- Dragonfly
- Cumberland Falls

FAR LEFT: Cove Spring Park/Nature Preserve in Frankfort, originally purchased in 2001, was approved for a property expansion in 2009 by the Heritage Land Conservation Fund. KHLCHF Board photos

By Lisa Wellings
Kentucky Heritage Land Conservation

Kentucky has an invaluable natural heritage recognized nationally and internationally for its outstanding, productive, biologically and geologically diverse lands and waters. The Kentucky Heritage Land Conservation Fund is committed to protecting these lands and “keeping Kentucky green” by awarding grant funds to purchase and preserve the state’s natural lands in perpetuity for enjoyment by this and future generations.

Heritage Land dollars have been awarded to protect and conserve some of Kentucky’s best-known natural areas—old growth hardwoods at Blanton Forest in eastern Kentucky; savannah woodlands at Griffith Woods as well as parts of the Kentucky River Palisades in central Kentucky; urban forests at the Jefferson Memorial Forest in the state’s largest city; bat populations and caves in southern Kentucky; cliff-lined valleys along the banks of the Martins Fork Wild River in Harlan County; and diverse watershed and wetland areas with endangered mussel species at the Green River State Forest in the western part of the state.

Most people do not realize this conservation fund is the primary source of state funding for the purchase of natural areas. Since 1995, the board has played an integral part in helping state agencies, local governments and state colleges and universities protect and conserve more than 34,800 acres of Kentucky’s natural areas and habitats. To date, the fund has provided financial support, in whole or part, to acquire 124 properties in 55 counties.

In 2009, more than 3,150 acres of Kentucky’s natural lands in 13 different counties were conserved with funding assistance from this program:

- Local governments and universities protected 1,275 acres in Warren, Pulaski, Laurel, Hart and Livingston counties, including a cave in Warren County and an 873-acre addition to the Livingston Wildlife Management Area.
- Program dollars supported the addition of more than 575 acres to the Perryville Battlefield, William Whitley State Shrine and Pine Mountain parks sites.
- The Kentucky State Nature Preserves Commission added more than 190 acres to three state nature preserves in Hardin, Graves and Franklin counties.
- In the largest purchase reported in 2009, the Kentucky Department of Fish and Wildlife Resources partnered with Breckinridge County Fiscal Court to conserve more than 1,112 acres in the Town Creek/Flint Run project expanding the Yellowbank Wildlife Management Area.

In addition, 16 project applications were reviewed and approved by the board in 2009. Funding awards totaling more than \$6.2 million were approved for the proposed acquisition and management of more than 3,750 acres located throughout the state.

How can you help protect Kentucky’s treasures of nature—the forests, wild rivers and savannah woodlands? Choose a nature license plate when you register your car, light truck or SUV. The \$10 fee above normal registration is tax deductible and goes directly to the Heritage Land fund. Keep Kentucky green—buy a nature plate.

Attendees deem conference a success

By Natalie Jensen

Department for Energy Development and Independence



addition, several awards were presented for efforts made in protecting the environment and creating an energy-efficient future (see center box).

The second day of the conference included presenters that spoke on a variety of energy issues. As the day progressed, attendees had the opportunity to learn about research being accomplished, legislation on the national and state level, and energy efforts that the industry is undertaking. When the conference ended, all attendees had been enlightened on the actions being taken toward energy and environmental efficiency at the local, state and national levels.

Information sharing and bold decisions were made for Kentucky during this

In 2008, Gov. Steve Beshear and Energy and Environment Cabinet Secretary Len Peters released Kentucky's first comprehensive energy strategy "Intelligent Energy Choices for Kentucky's Future," a seven-point plan outlining how the state can become self-sufficient using diverse energy sources.

Expanding upon this plan, the 33rd Governor's Conference on Energy and the Environment, held Sept. 30 through Oct. 1, 2009, brought in national and state energy and environmental leaders to hold open and candid discussions on topics such as alternative renewable energy, developing nuclear energy in Kentucky, carbon management, biofuels and biomass, coal to liquids and coal to gas, energy efficiency and conservation.

The conference drew a record crowd of more than 500 attendees and more than



Conference Awards

- Kentucky State University was recognized by the Heritage Land Conservation Fund Board for providing excellent educational experiences that accommodate different learning abilities.
- The Silver Smokey Award was presented to Jim Funk, Jennifer Turner, Evelyn Morgan and Gwen Hensley of the Division of Forestry. (See Page 19 for details.)
- The Environmental Leadership Award was presented to the Appalachian Coal Country Watershed Team and Appalachian Regional Reforestation Initiative for their partnership in sponsoring and organizing tree planting events on previously mined land throughout the Appalachian coal region.
- The Energy Leadership Award was presented to CMTA Engineering Co., for designing more ENERGY STAR labeled buildings than any other engineering firm in Kentucky.

40 vendors to the Lexington Convention Center to exchange ideas that will benefit the citizens of Kentucky.

On Day 1, conference participants took part in a discussion on the American Recovery and Reinvestment Act, toured Duke's Envision Energy Center in Erlanger, Ky., and attended one of several workshops. The Envision Center is the first interactive exhibit to demonstrate integrated smart-grid technologies, a type of digital electricity network that is designed to save energy, reduce costs and improve the environment.

That evening, Gov. Beshear spoke about his goal of making Kentucky a national energy leader. In

year's successful conference. Even as the conference came to a close, discussions and meetings were continuing to be held on many levels throughout the Commonwealth. You can view conference presentations at www.dep.ky.gov/govconference.

TOP: The University of Kentucky partnered with the Energy and Environment Cabinet to display different forms of residential insulation and their R-factor ratings which are defined by their resistance to heat flow. **LEFT:** Energy and Environment Cabinet Secretary Len Peters (left) talks with conference attendees about Kentucky's energy initiatives. Photos by DEDI

Awards

Forestry team receives national award

By Lynn Brammer
Division of Forestry

Kentucky's Wildland Fire Prevention and Education Team recently received the Silver Smokey Bear Award for outstanding work in wildland fire prevention in southeast Kentucky and surrounding states. This merit award has been bestowed on well-deserving groups and individuals annually since 1957 by the National Cooperative Forest Fire Prevention Committee.

"The Silver Smokey Award is given to organizations or individuals who have a significant impact on wildland fire prevention within a regional scope over a minimum two-year period," said Leah MacSwords, director of the Kentucky Division of Forestry. MacSwords presented the award at the Governor's Conference on the Environment in October. Jim Funk, Jennifer Turner, Evelyn Morgan and Gwen Hensley accepted the award on behalf of the team.

Through the Cooperative Forest Fire Prevention Program, the USDA Forest Service, the National Association of State Foresters, and the Advertising Council sponsor the national Smokey Bear Awards to recognize outstanding service in the prevention of human-caused wildfires and to increase public recognition and awareness of the need for continuing wildfire prevention efforts. Smokey Bear Awards are chosen through a nomination process



LEFT TO RIGHT: Frank Beum, Daniel Boone National Forest supervisor; Jim Funk, Jennifer Turner, Gwen Hensley and Evelyn Morgan, Kentucky Wildland Fire Prevention and Education Team; Kentucky Governor Steve Beshear and Leah MacSwords, director of the Kentucky Division of Forestry. Division of Forestry photo

and a maximum of five silver awards are handed out annually across the country. For more information about wildfire prevention, visit the KDF Web site at www.forestry.ky.gov.

the pawpaw comeback *Continued from Page 13*

developing orchard management recommendations, conducting regional variety trials, understanding fruit ripening processes, and developing fruit storage techniques.

Dr. Pomper's research efforts also generated interest at the Kentucky Division of Forestry (KDF). In 2008, KDF and KSU entered into an agreement whereby crop seeds were collected from KSU's pawpaw orchards in order to increase the availability of seedlings at the state nurseries. The high-quality seedlings can be used for wildlife habitat, other traditional plantings or used by farmers for propagating superior pawpaw varieties.

Additionally, a seedling bed at KDF's Morgan County Nursery was planted with seeds selected from specimens at the KSU orchard that were native to Kentucky and characteristically bore heavy crops of medium to large fruit—essentially a "Best of Kentucky" crop. These seedlings will be used to establish a special pawpaw seed orchard so that KDF will have a seed source to annually produce a superior selection that will be sold as Best of Kentucky pawpaw seedlings. KDF foresters say that the Best of Kentucky seedlings will be available in four to five years.

"Pawpaws are a valuable tree in Kentucky's forests, and we are thrilled

to partner with Kentucky State University," said Leah MacSwords, KDF director. "Our partnership is an efficient and cost-effective way to increase the growth of quality pawpaws in our forests and on farms across the state. Everyone benefits."

Organic growers and backyard gardeners who are interested in purchasing pawpaw seedlings should contact KDF at 1-800-866-0555 or fill out the seedling order form on Page 7. Seedlings are available at a reasonable price and are shipped in the late fall and early spring.

For more information about KSU's pawpaw research program, visit www.pawpaw.kysu.edu.

MacSwords receives ATFS Sustained Excellence Award

By Lynn Brammer
Division of Forestry

Listing the attributes of a great leader in forestry would include words like advocate, promoter, supporter, chair, volunteer and participant. Or, you could just say 'Leah MacSwords.'

MacSwords received the 2009 Sustained Excellence Award during the 86th Annual National Association of State Foresters meeting in Albuquerque, New Mexico. The award honors state foresters who have been strong advocates and

landowner stewardship plan in the state. In early 2009, she attended meetings on Leadership in Energy and Environmental Design requirements for state buildings and was instrumental in the modification of state regulations to allow certified Tree Farm wood to be given credit in the state-approved system.

Program, as her division handles more than 95 percent of the state's tree farm re-inspections.

Not one to just "talk the talk," MacSwords is deeply involved with Tree Farm Committee leadership and is an active member by participating in its meetings on a regular basis.

"Without Leah, her leadership and her commitment to the Tree Farm Program, we wouldn't be the largest and one of

landowner stewardship plan in the state. In early 2009, she attended meetings on Leadership in Energy and Environmental Design requirements for state buildings and was instrumental in the modification of state regulations to allow certified Tree Farm wood to be given credit in the state-approved system.

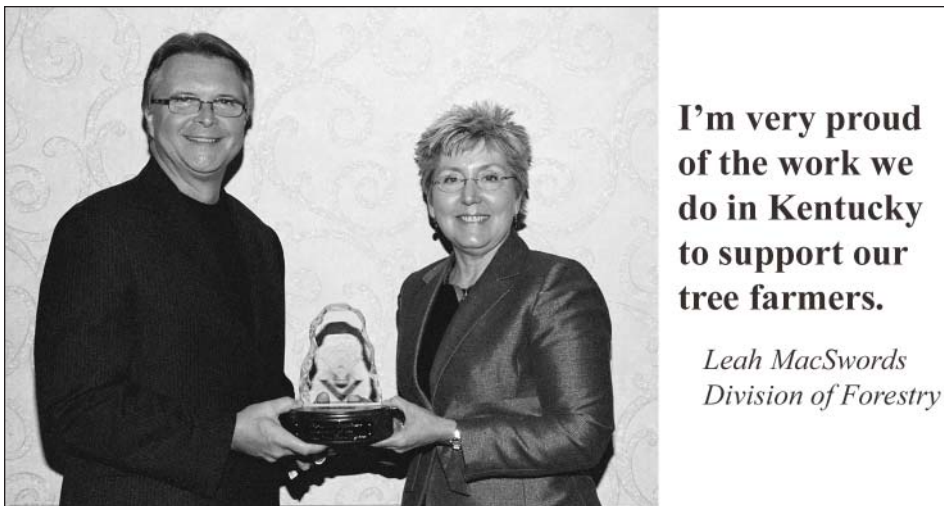
MacSwords is past head of the Southern State Foresters group and past president of the National Association of State Foresters where she continues to promote the Tree Farm Program to her colleagues throughout the United States.

The American Tree Farm System® (ATFS) is a national program that promotes the sustainable management of forests through education and outreach to private forest landowners. Founded in 1941, ATFS has 24 million certified acres of privately owned forestland and 91,000 family forest land owners who are committed to excellence in forest stewardship. Family forest landowners manage their forestlands for wood, water, wildlife and recreation with assistance from 4,680 volunteer foresters.

ATFS is a program of the American Forest Foundation, a nonprofit conservation and education organization that strives to ensure the sustainability of America's family forests for present and future generations. Its vision is to create a future where North American forests are sustained by the public that understands and values the social, economic and environmental benefits they provide to communities, the nation, and the world.

Bob Simpson, senior vice president of forestry at the American Forest Foundation, presents Leah MacSwords with the award for her work in support of the Tree Farm Program.

Photo by Division of Forestry



I'm very proud of the work we do in Kentucky to support our tree farmers.

*Leah MacSwords
Division of Forestry*

supporters for the American Tree Farm System®, a program of the American Forest Foundation.

"I am honored to receive this recognition, and I'm very proud of the work we do in Kentucky to support our tree farmers," MacSwords states.

MacSwords' commitment to sustaining the Tree Farm Program provides the foundation for a sustained forest for present and future generations of forest landowners and their families.

As director of the Kentucky Division of Forestry for the past eight years, MacSwords has been a strong and adamant supporter of the Kentucky Tree Farm

the most valued landowner groups in the country," said Bob Simpson, senior vice president of forestry at the American Forest Foundation.

Due to MacSwords' leadership of, and belief in, the program, Tree Farm information and a visual display is available at numerous field days conducted throughout the year in cooperation with other agencies. The Division of Forestry also distributes Tree Farm information to participants of the annual Kentucky Wood Expo and annual Kentucky Forest Industries Association meeting.

MacSwords also instituted a policy that includes Tree Farm brochures in every



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TVA and Commonwealth sign pact on energy resources

The Tennessee Valley Authority and the Commonwealth of Kentucky are pledging to work together to ensure a clean, reliable and affordable energy supply over the next decade.

TVA officials recently signed a Memorandum of Agreement with the Energy and Environment Cabinet (EEC) committing both agencies to a list of goals for the development and use of energy resources through 2020.

"This agreement is an example of our long-term commitment to providing clean and renewable energy sources to the Tennessee Valley," said TVA Senior Vice President of Environment and Research Anda Ray. "This effort is important not only to the environment, but to the region's economy and the welfare and quality of life for the residents of Kentucky."

The memorandum reaffirms TVA's goal of reducing peak electricity demand on its system by up to 1,400 megawatts by 2012 and to generate at least 50 percent of its electricity from clean energy resources by 2020. TVA pledges to continue programs such as Green Power Switch, Energy Auditing and to keep working on more programs that are mutually beneficial to the state and TVA.

Kentucky's EEC agrees to work with other state agencies to promote clean energy resources through expedited permitting of such energy-resource projects; to promote and establish requirements and incentives for construction of energy-efficient homes,

businesses and industries; support the development of infrastructure for alternative-fueled and electric vehicles; and to assist local governments and small businesses in improving energy efficiency of existing buildings.

"This agreement works hand in hand with Kentucky's seven-point strategy for energy efficiency and will help us work with TVA in bringing about energy and environmental changes that will better serve the public," said Energy and Environment Cabinet Secretary Len Peters.

Both parties also agree to work together to educate the public, including teachers and students, about the prudent use and conservation of energy.

The agencies will also produce an inventory of renewable energy resources in Kentucky. The state will participate in TVA's process to upgrade its integrated resource plan to explore future energy and resource stewardship needs across the valley. TVA will hold public meetings to enhance public involvement as well as an annual public meeting on the development and use of energy resources.

TVA is the nation's largest public power provider and is completely self-financing. It provides power to large industries and 158 power distributors that serve approximately 9 million consumers in seven southeastern states, including 225,000 households in Kentucky.

