



Land Air & Water

Kentucky Energy and Environment Cabinet

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Winter 2011

Land Air & Water

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Stump receives National Environmental Fellowship



Kenya Stump of the Kentucky Division of Compliance Assistance is the recipient of a national conservation fellowship, which enables her to bring biofuel education to Kentucky schools.

Stump is one of 40 individuals nationwide selected as a 2010 *TogetherGreen* Fellow. Supported by a conservation alliance of Audubon and Toyota, the fellowship offers specialized training in conservation planning and execution, the chance to work and share best practices with conservation professionals, and assistance with project outreach and evaluation. Each fellow receives \$10,000 towards a community-focused project to engage local residents in conserving land, water and energy, and

contributing to greater environmental health.

For her project, Stump plans to form the Kentucky Biofuels for Schools Program that will focus on educating high school students on biofuels and installing biodiesel processing equipment at selected schools. By utilizing waste oils and greases from school cafeterias and community restaurants, students can create biodiesel as they learn chemistry lessons. The biodiesel could then be used within the school grounds in landscaping equipment, generators or made available for the community. The program will help students pursue careers in biofuels, as well as demonstrate the value of biofuel to the community. Stump's project will involve the support of eight environmental organizations in the state.

"Kenya can make a real difference in the health of our environment and the quality of our future," said Audubon President David Yarnold. "Each of our fellows demonstrates exceptional environmental understanding and commitment, combined with tremendous potential to inspire and lead others. Together, they represent the talented and diverse leadership the environmental community needs to tackle the challenges and opportunities confronting us today and in the years to come."

"I am honored to be awarded the fellowship and represent Kentucky," Stump said. "This gives me the opportunity to leave a legacy for Kentucky in a program that will inspire young minds, enrich Kentucky's educational system, and improve our environment—a win for all Kentuckians."

Stump is a native of Muhlenberg County and is involved with numerous environmental organizations, including the Kentucky Association for Environmental Education and KY EXCEL, the state's environmental leadership program.

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Our Cover

This photograph was taken on Laurel Ridge Trail at Natural Bridge State Resort Park by David Hargis of Frankfort.



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Burn wisely this winter

Burn the right wood, the right way, in the right wood-burning appliance

By Roberta Burnes
Division for Air Quality



TOP LEFT: EPA-certified wood-burning appliances burn efficiently and emit virtually no smoke when operated correctly. **TOP RIGHT:** Properly seasoned firewood burns hotter, cuts fuel consumption and reduces the production of smoke. **ABOVE:** Chimneys should be cleaned and inspected once a year. Photos provided by the EPA

Ah, the smell of a cozy, wood fire. For many homeowners, there's nothing nicer than to snuggle up to the wood stove or fireplace on a cold winter's night. With the rising cost of heating fuel, many are turning to wood heat to supplement or even replace much of their home heating needs. But in some communities, wood smoke can be a significant source of wintertime air pollution. By changing the way you burn wood, you'll save money, reduce air pollution indoors and out, and protect your health as you stay warm this winter.

Wood smoke may smell good, but it's not good for you. Burning wood releases toxic chemicals like dioxin, formaldehyde and arsenic. Burning also floods the air with fine particles—called particulate matter or PM—that can become embedded deep inside the lungs. Numerous studies link particulate exposure to serious health problems, including heart and lung disease. Wood smoke can affect everyone; however, children under 18, older adults and people with diabetes, heart disease, asthma or other lung diseases are the most vulnerable.

The U.S. Environmental Protection Agency (EPA) estimates that 12 million wood-burning appliances are in homes across the U.S. today. Of these, 70 percent to 80 percent are older, inefficient models manufactured before 1988. Old wood stoves waste firewood, pollute the air in your neighborhood and create dust inside your home. In contrast, today's EPA-certified wood stoves burn so efficiently

that they emit virtually no visible smoke when operated according to manufacturer's specifications.

"When I am running my wood stove, you can't see or smell any smoke coming from the chimney. Many of my neighbors didn't even know we heated our home with a wood stove until we had a holiday party last winter," says Larry Brockman, who heads up the EPA's Burn Wise Program, which educates consumers on proper wood stove usage. "EPA-certified wood-burning appliances emit 70 percent less pollution than older conventional models."

For this reason, the EPA recommends replacing old wood stoves with modern heating appliances whenever possible. A wide range of choices exist, from wood stoves to fireplace inserts. Prices range from \$1,000 to \$3,000 before installation.

When it comes to reducing air pollution, having the most efficient wood stove is only part of the solution. Equally important is what and how you burn. By burning wisely, you can dramatically reduce the amount of smoke your appliance emits—even if your appliance is one of those older, less-efficient models. Here are a few simple tips to make your fire burn hotter, keep your wallet fatter, and keep your local air cleaner and healthier.

- **Season all firewood.** Seasoned wood burns hotter, cuts fuel consumption and reduces the amount of smoke your appliance produces. Properly seasoned wood is split, securely covered or stored, and

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What can state cost share do for you?

By Johnna McHugh
Division of Conservation

Thousands of Kentucky landowners receive state assistance through the Kentucky Soil Erosion and Water Quality Cost Share program. Known informally as state cost share, the program was created in 1994 and helps landowners implement best management practices to protect soil and water resources on their property. Since the program's inception, more than \$113 million has been approved for use in implementing best management practices through more than 13,000 submitted applications. This money has assisted landowners in all of Kentucky's 120 counties.

Two farm families from Henry County share their experiences and property benefits after applying for state cost share.



ABOVE: Fencing protects Bill and Karen Shannon's pond from erosion due to heavy horse traffic. **LEFT:** Richard Riggs stands in the heavy-use area that includes a watering facility for his cattle. Photos by Johnna McHugh



ELIGIBLE BEST MANAGEMENT PRACTICES

On-farm fallen animal composting, animal waste control facilities, animal waste utilization, vegetative filter strips, sinkhole protection, heavy-use area protection, rotational grazing system establishment, livestock stream crossing and riparian area protection.

The Shannons

Bill and Karen Shannon moved back to Henry County three years ago to enjoy retirement in the Campbellsburg community where they purchased an 18-acre farm for their thoroughbred horses. They made necessary improvements to the land and worked with the Henry County Conservation District and Greta Steverson, former Natural Resources Conservation Service district conservationist, to install a heavy-use tract near their barn that would prevent soil degradation and runoff caused by increased horse traffic. In addition, they installed watering facilities and fencing

through a similar federal program—the Environmental Quality Incentives Program. In discussing the cost share incentives they received, Karen Shannon noted, “Every little bit helps when you’re trying to improve things.” The Shannons plan to utilize the program again for future planned improvements.

The Riggs

Richard and Theresa Riggs own a 125-acre cattle farm in Pleasureville where they installed multiple practices with help from state cost share. Today, their farm has a heavy-use area that in-

cludes a watering facility, fencing around a pond and a renovated pasture. The heavy-use area helps to reduce runoff from a region where the cattle frequently gather. Drinking water is pumped from a nearby pond to the watering facility where cattle drink but cannot damage the soil around the pond due to fencing that restricts access.

“Having a fence around my pond protects my own water quality and the water for the people downstream,” said Richard Riggs. “The state cost share program helps small farmers repair problems they wouldn’t be able to afford to fix.”

Learn More about State Cost Share

Local conservation districts have additional information about state cost share and other programs. District employees, as well as associated state and federal employees, are happy to talk with landowners about programs that can assist them in implementing best management practices on their land. Contact information for all 121 conservation districts is available on the Division of Conservation’s website at <http://conservation.ky.gov/Pages/ConservationDistricts.aspx>.



Kentucky communities join day of global environmental action

By Allison Fleck
Division of Water



On Oct. 10, Kentuckians across the Commonwealth joined in the 10-10-10 Global Work Party, a day of action to fight climate change that united more than 7,000 events in 188 different countries, perhaps the most widespread day of environmental action in history.

The work parties, which ranged from solar installations to tree plantings, were designed to send a clear message—citizens are getting to work on climate solutions and so should their politicians.

In the state capitol, two local organizations, Frankfort Climate Action Network and Walk/Bike Frankfort, teamed up to lead volunteers in building trails to expand the city’s network of walking and biking trails. Afterwards, they celebrated at the Kentucky Coffeetree Café, where area residents who are working to reduce their household carbon footprint through the initiative “Lighten Up, Frankfort!” were recognized at the celebration.

“I joined the Global Work Party because it is past time for us to get to work dealing with climate change,” said Andy McDonald, Frankfort Climate Action Network member. “I hope state and world leaders take note of the tens of thousands of people taking part in this day.”

Dick Watkins, who participated in Frankfort’s 10-10-10 Global Work Party, said, “I get a lot of joy from our remark-

LEFT: Dick Watkins works to pry car parts from the mud in Penitentiary Creek off of Lewis Ferry Road in Frankfort. **RIGHT:** Volunteers from Frankfort High School clear the trail off Lewis Ferry Road as a service project. Photos by Allison Fleck

able planet whether it be physical, mental or spiritual. Keeping the plant ‘whole’ is important to me, and from that comes the desire to participate in projects that are local, like removing tires from a new hiking trail, to global, such as negating climate change.”

In Louisville, volunteers installed solar panels, planted trees, weatherized old buildings, worked in community gardens and participated in a faith-based eco-justice workshop.

Neighbors around Lexington picked up trash, and in Carlisle volunteers began construction on a cabin to support the preservation of woodlands at a local farm.

In Leitchfield, volunteers planted trees at the Grayson County Judicial Building, and an organic farmer in Shelbyville painted a mural on her barn.

In Morehead, volunteers broke ground for a passive solar Habitat for Humanity house. Also, people spoke about climate change at their churches, raised money to plant trees in eastern Kentucky and participated in a Second Sunday event promoting

getting outside and being active.

At Transylvania University, biology and anthropology majors, members of the Delta Sigma Phi fraternity and the Quidditch team and others removed invasive species in the Wolf Run Watershed, worked to beautify the neighborhood surrounding campus and helped out at the University of Kentucky Arboretum.

The Environmental Student Society of Murray State University organized a trash pickup and then arranged the trash to form the numbers “350.” The intent was to convey the message that the world needs to return to a concentration of 350 parts per million or less of carbon dioxide in the atmosphere as quickly as possible.

The Sisters of Loretto planted 10 hardwood trees in memory of the trees that the community uses as paper and the ones that were destroyed by the ice storm.

In Louisa, residents removed litter, beautified a city park, and weatherized and installed new windows at the Garden Theater and the Odyssey Drug and Alcohol Center.

Organizers estimate that during the Global Work Party citizens planted over 100,000 trees, installed over 100 solar panels, weatherized hundreds of homes and buildings, cycled over 1,000 miles, cleaned up at least 500 miles of coastline and much more.

Kentucky Home Performance

Helping Kentuckians create a comfortable home

By Brooke Smith
Department for Energy Development and Independence

If the thought of receiving high energy bills, fighting drafty doors and windows, and sacrificing hard-earned dollars for comfort during extreme temperatures this winter sends chills down your spine, then the Kentucky Home Performance (KHP) program may be just what you need.

KHP is aimed at helping Kentuckians create more comfortable, energy-efficient homes without breaking the bank. It provides low-interest loans, rebates and support to homeowners who want to make improvements to their existing homes, making them more energy efficient, saving money on monthly utility bills and reducing carbon emissions.

Created through a partnership between the Department for Energy Development and Independence, Kentucky Housing Corp. and the Kentucky Finance and Administration Cabinet, KHP is funded with \$4 million from the American Recovery and Reinvestment Act through the U.S. Department of Energy and \$2.1 million from Kentucky Housing Corporation. While KHP is available to all homeowners, it targets moderate- to high-income households, whereas the federal Weatherization Assistance Program exists for improvements to low-income households.

By visiting KHP's website (www.KYHomePerformance.org), homeowners can find a certified energy professional who can perform an energy evaluation



ABOVE: Jamie Clark with Arronco Comfort Air demonstrates the "blower door" test to First Lady Jane Beshear (left). The test uses an infrared camera to estimate air leakages throughout Larry and Melissa LeVine's home in Lexington. **LEFT:** First Lady Jane Beshear and Melissa LeVine. Photos courtesy of Charla Jackson Peter, Kentucky Housing Corp.

on their home. The evaluation identifies a list of home improvement opportunities,

ranking them according to the best return on investment. For example, replacement windows provide a lower return on investment than sealing the heating and cooling ductwork. Once the homeowner decides which improvements should be made, a contractor from an approved list will make the improvements. Once completed, KHP sends an evaluator to do a quality assurance check to ensure all improvements were done according to best practices and to approve measures that are eligible for program incentives. The homeowner may then choose to receive a loan or rebate to assist with the cost of the energy efficiency improvements.

"Customers can often be intimidated by the home-repair process, but making energy-efficient improvements is a solid investment in a home's value," said Richard L. McQuady, executive director of the Kentucky Housing Corp. "With this program, participants can feel comfortable

Benefits of Kentucky Home Performance

- Savings of 20 percent or more on utility bills.
- Fewer drafts and more comfortable rooms.
- Work performed by specially trained professionals.
- Third-party quality assurance on home improvements.
- Cash rebates of up to \$2,000 or loans of 6.99 percent for up to \$20,000 (terms and conditions apply).
- First 1,000 homes to register receive \$150 toward the cost of a whole-house energy evaluation.
- First 1,000 homes to register will receive a free, quality-assurance evaluation to verify the installation of the improvements, an evaluation of the home's energy performance and help projecting future energy savings.

For more information or to register for the program, go to www.KYHomePerformance.org

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Life returns after years of abuse

Articles by Allison Fleck
Division of Water

A restoration project in the Cromer Ridge Area of Laurel County is healing the scars caused by years of unregulated use of off-highway motorized vehicles and all-terrain vehicles. Funded in part by a nonpoint source pollution control grant (see sidebar article), the project will improve wildlife habitat and water quality by restoring vegetation, controlling erosion and eliminating rampaging vehicles.

Three years ago, a group of concerned citizens partnered with local government and law enforcement officials to reclaim Cromer Ridge. The Cromer Ridge Team initiated a watershed restoration project to reduce adverse impacts on water quality, vegetation and wildlife. Their goals were to:

- Eliminate soil erosion and reduce sediment load.
- Restore vegetation and ground cover with native plant species.
- Improve and restore suitable habitat for plants and animals.

- Re-establish the natural ecosystem.

The group received a 319(h) Clean Water Act grant of \$582,000 from the U.S. Environmental Protection Agency through the Kentucky Division of Water. A state match of \$390,000 was funded through the Kentucky Division of Conservation and the Kentucky Department of Fish and Wildlife Resources. Participating partners also included the Daniel Boone National Forest, The Nature Conservancy, the Laurel County Government and citizens with the Cromer Ridge Team.

The Cromer Ridge Watershed, located in the Daniel Boone National Forest, is home

Continued on Page 7



LEFT: Two- and four-wheeler enthusiasts used this meadow for “mudding” prior to restoration.

ABOVE: With the help of a 319(h) Clean Water Act grant, the meadow is restored and suitable for plant and animal habitat. Photos courtesy of the U.S. Forest Service



Cromer Ridge Team efforts recognized

In 2009, the Kentucky Environmental Quality Commission honored the Cromer Ridge Team with an Earth Day Award for their efforts to restore more than 8,000 acres of public and private lands in Laurel County. The team also received the 2008 Regional Forester’s Partnership Award presented by the U.S. Department of Agriculture Forest Service.

\$3.3 million federal grant awarded to prevent nonpoint source pollution

Ten Kentucky communities and organizations will share approximately \$3.3 million in a federal nonpoint source pollution control grant for the development of watershed management plans and implementation of nonpoint source pollution controls.

The projects will be funded under Section 319(h) of the federal Clean Water Act and administered by the Kentucky Division of Water (DOW).

Pollution from runoff, or nonpoint source pollution, is the main cause of impairments to streams, lakes and rivers in Kentucky. It results when rainfall or snowmelt moves over and through the ground, picking up loose soil and pollutants along its way. The waterborne pollutants often travel through storm sewers that discharge directly into streams—bypassing treatment at a municipal water treatment facility.

The DOW received 22 grant project proposals that underwent a multi-agency ranking process. Of those, 14 were invited to apply for the federal fiscal year 2010 funding. The 10 projects selected must provide 40 percent in matching funds. Projects selected for funding include:

1. Habitat for Humanity Bowling Green/Warren County Infrastructure Statewide Demonstration—create an integrated green infrastructure using low-impact development techniques to manage storm water as part

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\$aving



Seed

By Lynn True
Division of Forestry

The Kentucky Division of Forestry (KDF) has operated and maintained two seedling nurseries—John P. Rhody in western Kentucky and Morgan County Nursery in eastern Kentucky—for more than 50 years. During this time, landowners, resource agencies and communities have come to rely on the high-quality seedlings for a variety of reforestation projects.

Although the nurseries are a critical part of KDF's mission, funding to operate and maintain these facilities has become a challenge. In fact, reductions have made significant changes in how the nurseries operate—including the way the nurseries get seed. Historically, the division purchased most of the needed seed from contractors, but in recent years collecting and saving seed has become the added responsibility of the division. Nowadays, it is not uncommon for division personnel to take to the woods for a few days of seed collecting.

Each fall, KDF personnel commit a few days to collecting seed. Seed collecting, though time-consuming, is a testament of the division's staff to save money and maintain the nurseries. Both nurseries are capable of growing 3 million to 4 million seedlings annually, and this year the division was slated to collect nearly 25,000 pounds of seed from various species of oak, hickory, walnut, ash, flowering dogwood and redbud.

Although seed collecting is finished by late autumn, nursery operations continue throughout the year. Nursery workers must dry, process and store the seed to prepare them for germination. They also amend soils, irrigate and fertilize the developing plants throughout the year. Finally, after one year of growth, bare-root seedlings are lifted, packaged and distributed to the public.

Seedling sales begin in early fall and continue through late spring, but public inquiries are often year-round. For more information or to obtain a seedling order form, visit the KDF website at <http://forestry.ky.gov/> or contact KDF Frankfort office at 1-800-866-0555.



TOP RIGHT: KDF employees Pam Snyder and Alice Mandt sort through a pile of seed for optimal selection. **TOP LEFT:** Ben Ueltschi, KDF forester, collects bur oak seed at the Lexington Cemetery. **ABOVE:** KDF employees Strider Deaver and Alice Mandt bundle bur oak seeds for delivery to the Morgan County Nursery in eastern Kentucky. Photos by Lynn True

Life returns after years of abuse

Continued from Page 5



Before restoration, bare rock is exposed at Cromer Ridge due to 30 years of abuse by off-road vehicles.

Photo by U.S. Forest Service

to the scenic Rockcastle River. In addition to its designation as a Kentucky Wild River, the Rockcastle provides habitat for several threatened and endangered species. Woods Creek, which empties into the Rockcastle, is a source water protection area and provides drinking water for the city of London.

Over the years, Cromer Ridge became a mecca for two- and four-wheeler enthusiasts, whose hard-riding habits had taken their toll on the environment. As soil became compacted, its ability to support vegetation diminished by inhibiting root growth and reducing infiltration of water. As a result, erosion increased.

Erosion has a domino effect. As vegetative cover disappears, water infiltration and soil stabilizing crusts are disrupted and the precipitation runoff rates increase. This accelerates the rate of soil erosion and the disappearance of wildlife. Sediment runs off into local water bodies, in this case the Rockcastle River, which also feeds the Woods Creek Reservoir. Sedimentation reduces the oxygen needed by aquatic life, thereby suffocating the local wetland fauna. Muddy water also inhibits sunlight penetration down to aquatic vegetation, which kills off local wetland plants.

Wetlands improve water quality by processing nutrients, suspending materials and other pollutants, and by trapping and filtering sediments and heavy metals. Once the wetland's capacity to filter water is compromised, it can no longer provide society—in this case, the residents of London—with clean drinking water.

Early in the project, the focus was on closing the trail system adjacent to the Rockcastle River, where the trail and playground areas were dumping sediment into the Rockcastle River and threatening several endangered mussel species. Best management practices (BMPs) for erosion control were introduced, including water bars, sediment basins and seeding. In addition, nearly 10 miles of trail were closed.

More recently, the eroding ridge tops, where loss of 10 feet to 15 feet of topsoil exposed bedrock and unfertile sand, have been reshaped, erosion control BMP structures installed, fertile soil imported and the area seeded. With the help of a private landowner, old tires and other debris have been removed.

The project also includes a public education component, which includes distributing information on alternative, legal, four-wheel vehicle areas. Tours are conducted to highlight trail closures and the BMPs being used to reduce erosion.

"Our partnership effort is reversing years of environmental detriment to soil and water in the Cromer Ridge area," said Jon Walker, forest hydrologist with the Daniel Boone National Forest. "Vegetation is becoming re-established, wildlife habitat is being restored and the sediment load into the Rockcastle River is significantly reduced."

\$3.3 million federal grant awarded to prevent nonpoint source pollution

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of a planned medium density green affordable housing community. Grant recipient: Western Kentucky University, Center for Environmental Education and Sustainability. Federal grant: \$391,205. Matching grant: \$263,871.

2. Four Rivers Basin

Coordinator—work with communities, agencies and businesses to improve water quality and reduce nonpoint source pollution. Grant recipient: Jackson Purchase Foundation Inc. Federal grant: \$173,596. Matching grant: \$115,731.

3. Meeting the Demand for Land

Management Education—reprint the *Kentucky Forest Landowner Handbook* for distribution in Kentucky's Appalachian counties. Grant recipient: Mountain Association for Community Economic Development. Federal grant: \$10,800. Matching grant: \$7,200.

4. Livestock Stewardship BMP

Training and Demonstration Project—install livestock best management practices on the University of Kentucky Princeton Farm to demonstrate innovative ways to reduce nonpoint source pollution. Grant recipient: University of Kentucky, Biosystems and Agricultural Engineering. Federal grant: \$188,814. Matching grant: \$126,186.

5. Rural Community Building

Efforts within the Little River

Watershed—establish a model for stakeholder collaboration in watershed management through educational activities in a rural setting to address water quality issues. Grant recipient: Cumberland River Compact. Federal grant: \$42,900. Matching grant: \$28,600.

6. Implementation of Green

Campus Master Plan on Kenton County School District STEM

Campus—implement a plan developed with a previous 319(h) grant to design and construct storm water best management practices. Grant recipient: Kenton County Schools. Federal grant: \$138,326. Matching grant: \$92,217.

Continued on next page

Make cents with WaterSense

By Allison Fleck
Division of Water

There's nothing like a good drought to remind us of our dependence on clean, plentiful water and the importance of water conservation.

The Kentucky Division of Water and the Kentucky Division of Compliance Assistance are teaming with the U.S. Environmental Protection Agency (EPA) to help consumers save water and money through EPA's WaterSense program. The program's mission is to protect the future of the nation's water supply by promoting and enhancing the market for water-efficient products and services. Preserving the water supply is critical to our economy, the environment and human health. Since its inception in 2006, WaterSense has helped consumers save a cumulative 46 billion gallons of water and \$343 million in water and sewer bills.

WaterSense is also partnering with manufacturers, retailers and distributors, and utilities to bring WaterSense products to the marketplace and make it easy for consumers to purchase high-performing, water-efficient products. WaterSense-labeled products meet water efficiency, perform well, and help save money and encourage innovation in manufacturing.

If you're remodeling your bathroom or kitchen or installing a sprinkler system for the yard, take time to learn about WaterSense before you make a purchase.

Bathrooms account for about half the water use in most homes, and installing efficient toilets and faucets can save the average American family 11,000 gallons of water per year. Advances in plumbing technology and design mean that faucets, showers and toilets can use significantly less water than standard models while still delivering the rinse, spray and flush consumers expect.

When it comes to lawn care, landscape irrigation wastes up to 1.5 billion gallons every day across the country due to faulty systems. WaterSense irrigation partners are certified through WaterSense-labeled programs for their expertise in water-efficient irrigation technology and techniques that reduce water consumption

and save money while maintaining healthy and beautiful landscapes.

If one out of every 10 homes in the United States upgraded to water-efficient fixtures, it could save more than 300 billion gallons of water and nearly \$2 billion annually.

To learn more about the WaterSense program and products, visit the EPA website at http://www.epa.gov/WaterSense/about_us/why_watersense.html.



Environmental benefits of water efficiency

- Fewer sewage system failures caused from water overwhelming the system.
- Healthier natural pollution filters such as downstream wetlands.
- Reduced water contamination caused by polluted runoff from over-irrigating yards and agricultural lands.
- Reduced need to construct additional dams and reservoirs or otherwise regulate the natural flow of streams.
- Reduced need to construct additional water and wastewater treatment facilities.
- Reduced surface water withdrawals that degrade habitat both in streams and on land close to streams and lakes.
- Reduced energy used to treat wastewater.

\$3.3 million federal grant awarded to prevent nonpoint source pollution *Continued previous page*

7. Dix River Watershed Implementation Project, Phase I—target identified water quality pollutants from failing wastewater systems and storm-related runoff. Perform public outreach and education. Grant recipient: City of Danville. Federal grant: \$200,460. Matching grant: \$133,640.

8. Woolper Creek Watershed-Based Plan Addressing Hydro-Modification—develop a plan to address water quality impairments and return streams to their designated uses. Grant recipient: Boone County Conservation District. Federal grant: \$449,870. Matching grant: \$301,247.

9. Bacon Creek Watershed Plan Implementation—revise and improve the existing watershed-based plan while promoting implementation of agricultural and residential best management practices. Perform public outreach and education. Grant recipient: Kentucky Waterways Alliance. Federal grant: \$255,953. Matching grant: \$170,636.

10. Brushy Creek Sediment, Habitat and Water Quality Investigation—build working partnerships in the watershed and develop a water quality data analysis report as a foundation for a Brushy Creek Watershed Plan. Grant recipient: Pulaski County Conservation District. Federal grant: \$487,919. Matching grant: \$325,279.

To learn more about nonpoint source pollution and the nonpoint source implementation grant program, go to <http://water.ky.gov/nsp/Pages/default.aspx> or e-mail james.roe@ky.gov.

Firewise for all seasons

By Lynn True and Jennifer Turner
Division of Forestry

A new year always brings new resolutions. In 2011, consider becoming firewise when you make your resolutions. Becoming firewise will help you protect your home and property from wildfires—and it is an easy resolution to keep because of simple guidelines, recommendations and assistance provided by the Kentucky Division of Forestry (KDF).



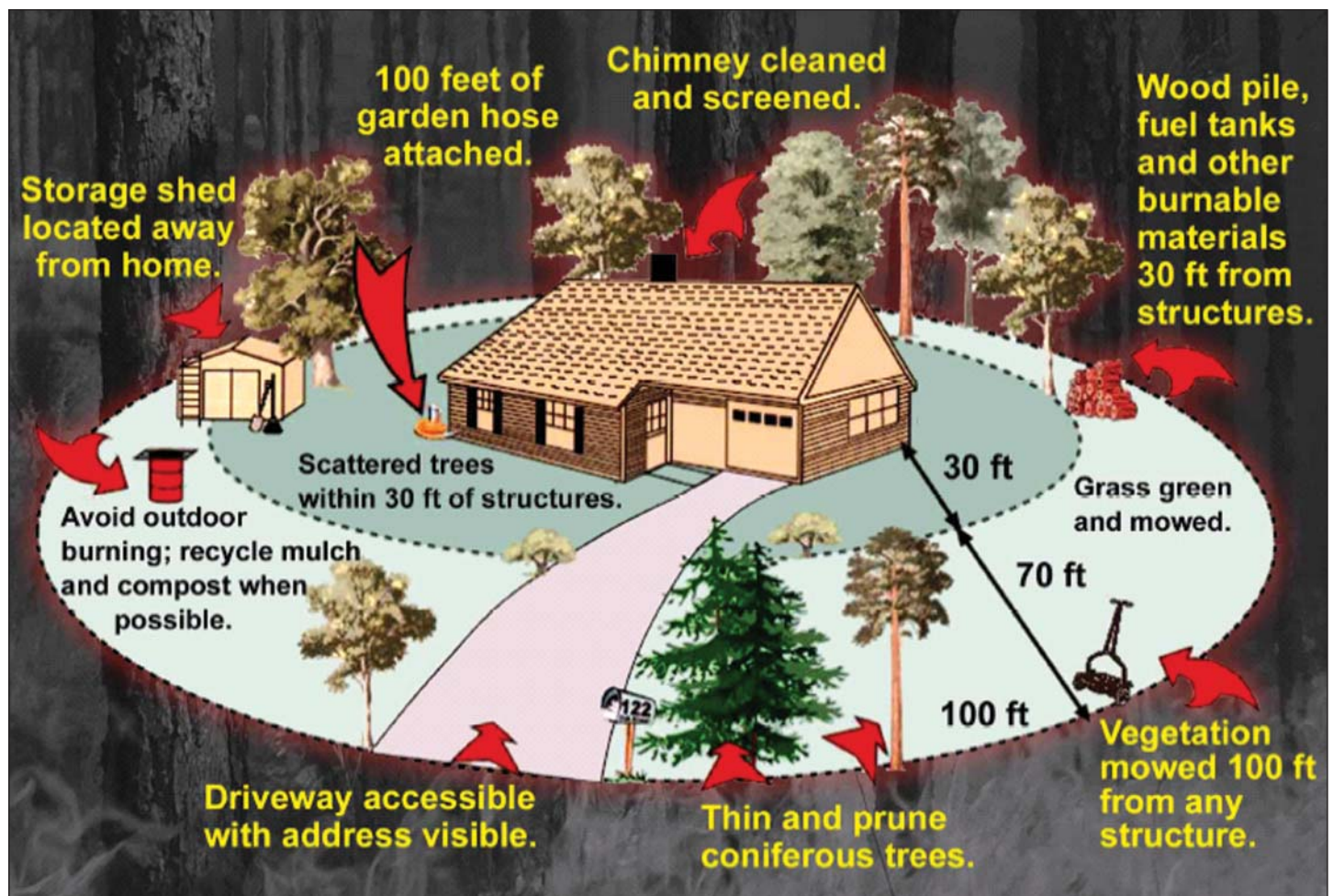
Every year in Kentucky, wildfires destroy many structures and homes. Wildfires have become an increased threat as many regions are changing from farmlands and forestlands to urban areas on the edge of development. These concerns are the basis for the Kentucky Firewise Communities program that began in 2004 and continues to draw interest each year.

Since its beginnings, the program has helped and funded more than 43 communities and rural fire departments, as well as provided wildfire prevention education and training across the state. Much of the program's success is attributed to Kentucky Firewise staff who have conducted more than 100 workshops since the program's inception and administered nearly \$2 million in grant money. Currently, there are

29 firewise communities in Kentucky and 41 communities have completed a Community Wildfire Protection Plan under the program. The success of the program is also a reflection of KDF's field staff throughout the nine district offices.

The key component of the Firewise program is that the primary responsibility for implementing the various practices is given to homeowners and community members. Firewise practices range from creating defensible spaces to improving mapping and signage for identifying roads and residences. Many of these practices are referenced in a season-by-season account of firewise activities intended to keep you and your community safe.

Resolve to be firewise by adopting the following practices during the new year.





Winter – Care and Prepare

December – During the holidays we take time to focus on our family and friends, and what is more important than their safety? Give the perfect holiday gift by helping a family member or neighbor firewise their home and property by limbing trees or cleaning gutters. A gift certificate for fire-resistant shrubs and trees from a local nursery is another great gift idea. As a neighborhood project, distribute firewise literature to homeowners that are unaware of firewise practices.

January - Snow is drifting, the wind is howling and the furthest thing from your mind is reducing the risk of wildfire to your home and property. January, however, is a great time to prepare for and reduce risks. Firewise resources are readily available by visiting the national Firewise Communities website at www.firewise.org for interactive hints, programs and checklists to prepare your home to withstand a wildfire.

Kentucky Firewise Staff

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(OPPOSITE PAGE) FAR LEFT: *Wildfires are an increasing threat to homeowners in wildland-urban interface areas.* LEFT: *This graphic shows firewise practices that help keep your property safe from wildfire.*

(THIS PAGE): *The Division of Forestry's Firewise trailer offers literature and interactive programs for citizens to learn about firewise practices.* Photos provided by KDF

February - In Kentucky, many rural neighborhoods face access challenges. Roads are often poorly marked and can be impassible come spring when fire danger is high. Ensure roads are cleared and pull-outs and turnaround areas are accessible for fire apparatus. While individual efforts by homeowners are the keystone of being firewise, community members should also work together and coordinate their efforts. After all, wildfire spreads regardless of property boundaries.

Spring – Clean and Clear

March - Spring often coincides with home renovations or construction projects. The choices you make regarding renovations could have a big impact on your home's ability to withstand a fire. Educate yourself about firewise home construction, fire-resistant materials and preventive maintenance that will improve the safety of your home. For example, fire-resistant material such as metal is the best choice

for roofing, and when it comes to siding, the thicker the material the better. Vinyl siding can melt from the heat of a fire, while noncombustible siding materials like concrete planking offers better protection. Decks, balconies and wooden walkways can also lead fire right to your door; therefore, it is advisable to enclose or wrap these areas with fire-resistant materials.

April - The days are longer and warmer and it's time for spring cleaning. Clearing debris from gutters and clearing extra firewood and kindling from under the deck or on the porch is one of the most important firewise practices to complete. If nearby woods catch fire, you don't want the added "fuel" next to your house. Remember, firefighters can only help fight a fire—prevention is your responsibility.

May - Spring brings Kentucky gardeners out of hibernation, and many begin thinking about landscaping and planting vegetation around their house. Keep in mind that the best firewise landscaping is simple, lush green space—essentially, a defensible space that won't burn. Maintain a 30-foot swath of green grass all the way around your home as a fuel break. Often, homeowners want to hide the foundation and visually soften the hard edges of a house with shrubs. However, shrubby conifers tend to burn like gasoline rags if ignited. Instead, consider lilies, irises, tulips or anything that starts from a bulb. Bulbs have fleshy leaves that hold water and are less likely to spread fire.

Summer – Mow and Grow

June - Clear dead grass and leaves away from your home and remove debris from gutters and on roofs. For the most part, anything green is your friend when it comes to reducing the chance that a wildfire will get to your home. Mowed green grass is particularly helpful for preventing the spread of fire, and strategically-placed broad-leafed trees might also slow a wildfire's path to your home.

July - Each year, thousands flock to Kentucky's, mountains, lakes and rivers to enjoy the great outdoors. Consequently, campfires are among the biggest fire risks, but if they are constructed and maintained correctly they can be relatively safe.

Continued on Page 12

Kentucky shares strategies in mine safety

Chinese take information back home in an effort to improve mine safety

By Evan Satterwhite
Department for Natural Resources



TOP: 20 delegates from China's mining profession receive a briefing on Kentucky's mine safety programs.

ABOVE: Johnny Greene, executive director of OMSL, discusses mine inspections, safety analysts and legislation regulating the mining industry.

Photos by OMSL

While the world has kept its eye on China during their decade of economic growth, that country's coal industry has had its eye on Kentucky.

China is the largest coal producer, as well as the largest coal consumer, in the world. Its output of raw coal is staggering, as is the number of employees in the industry (over 5 million) and the effect coal production has on their economy. Consequently, China also suffers from an alarming number of accidents and fatalities in its coal mines and, according to published news reports, the government is under pressure to improve mine safety.

During the past year, the Kentucky Office of Mine Safety and Licensing (OMSL) met with mining professionals from China's coal industry and various government regulatory agencies in three separate visits to shed some light on how our state deals with mine safety.

During their most recent visit in November, 20 delegates received a full briefing of OMSL's programs and how the state's mining accident rates have been reduced through one-of-a-kind programs created specifically for Kentucky.

With the help of interpreters, OMSL Executive Director Johnny Greene and his fellow directors explained how Kentucky's regulatory and safety programs operate, including the use of safety analysts, the frequency of mine inspections and procedures,

severity of penalties levied when violations are found and enacted legislation that regulates the industry. The Chinese were especially interested in Kentucky's mine ventilation processes as their underground mines are deep and wet, making them prone to high levels of methane gas.

"OMSL staff continue to work diligently to reduce accidents in Kentucky mines and reach our goal of zero-miner fatalities," said Greene. "While striving toward that objective, we are pleased to have the opportunity to share information about our safety program with the Chinese who confront similar problems and concerns on a much larger scale."

Greene also discussed other aspects of mining, including the types of equipment used, production numbers and types of engineering (room and pillar) generally used in Kentucky. Delegates also learned about accident investigation techniques and Kentucky's mine mapping initiative.

The Chinese concluded their visit at the University of Kentucky where they met with professors at the Mining Engineering Department and toured the Center for Applied Energy Research. The tour exposed the group to the university's ongoing research and development in the area of alternate energy resources. Another presentation by Mine Shield LLC, a Kentucky manufacturer, provided an overview of mine rescue chambers capable of supplying adequate air, food and water for 96 hours in the event of an underground emergency situation.

Overall, each visit was an educational opportunity; however, this last stopover showcased the additional advantage of visits from foreign delegations in stimulating opportunities for economic growth and additional jobs for Kentucky.

Kentucky continues to build on its strong reputation for mine safety and is greatly encouraged by the interest shown from the world's largest coal producer. The dedicated employees of OMSL welcome every opportunity to improve mine safety—whether at home or abroad.

Firewise for all seasons

Continued from Page 10



A firewise community organizes an event to raise funds and awareness about the dangers of wildfire.
Photo by KDF

Whenever possible, limit your campfire to the area where a fire ring is already in place. If a fire ring is not available and you must build a fire, follow these tips:

- Choose an area of dirt, sand or gravel. Clear a 5-foot area around the pit down to mineral soil.
- Place your fire away from overhanging branches.
- Use rocks to circle the fire pit.
- Keep a bucket of water and a shovel nearby in case a wayward spark ignites surrounding vegetation and to put out the fire later.
- Stack extra firewood away and upwind from the fire.
- Properly dispose of the match with which you light the fire.
- Never leave a campfire unattended...not even for a minute.
- When you are finished with your campfire, make sure it is completely extinguished. Douse it with water well before your departure time. Then, mix the coals with a shovel. Once you are sure the fire is out, use the back of your hand to feel the coals for heat you missed.

August – Hot, dry days bring dry grass and low moisture. Avoid parking all-terrain vehicles over dry grass where hot engines can start a wildfire. A spark from any kind of machinery or combustion engine can easily ignite dry vegetation. Ensure that all machinery is fitted with a spark arrester.

Fall – Cut and Cover

September – While cooler temperatures and shorter days can provide good opportunities for safe burning, another approach would be to cover your debris piles until the ground is frozen and the fire risk is at its lowest. Spread a tarp or flattened cardboard over the pile to keep the fuel dry and burnable until winter.

October – In the fall, homeowners often fire up the wood stove. Before you do, consider cleaning and inspecting the chimney for damage. It is also important to dispose of soot in a safe manner. (See *Burn Wisely this Winter* on Page 1 for additional information on choosing the right wood and best wood-burning appliance.)

November – Check fire extinguishers and smoke alarms. This is also a good time to remind family members about fire safety drills. Families should plan for two exit routes per room and pick a safe spot to meet.

As you and your family become more firewise, it is important to pass that knowledge on to others. After all, fire isn't the only thing that can spread rapidly—information can, too. Being firewise during every season takes practice, but the house and property you save might be your own. For more information about the Kentucky Firewise Communities program, contact KDF at 502-564-4496 or e-mail the firewise staff listed in the contact box on Page 10.

Information on grant funding and technical assistance is available online at <http://forestry.ky.gov/wildlandfiremanagement/Pages/KentuckyFirewiseProgram.aspx>.

Guide for protecting public health during drought conditions now available

By Allison Fleck
Division of Water

A new document from the Centers for Disease Control and Prevention (CDC) will assist public health officials, practitioners and other stakeholders in their efforts to understand and prepare for drought in their communities.

When Every Drop Counts: Protecting Public Health During Drought Conditions – A Guide for Public Health Professionals includes information about how drought affects public health, recommends steps to help mitigate the health effects of drought, identifies future needs for research and other drought-related activities and provides a list of helpful resources and tools.

Among the topics addressed are compromised water supplies and food and nutrition, diminished living conditions and the increased incidence of disease. It also includes discussions on the basics of drought, the water cycle and public policies relating to water.

Bill Caldwell, an environmental scientist at the Kentucky Division of Water, was one of the technical advisors on the project.

“Drought poses a variety of risks to human health in addition to the obvious threat to drinking water supplies,” Caldwell said. “Many communities have populations that may be vulnerable to contaminated water sources, increased incidence of disease, poor air quality or poor sanitation and hygiene. These risks should be evaluated by public health officials and incorporated into community drought planning exercises. This document is the first comprehensive guide to assist public health officials with that effort.”

To obtain a copy or learn more about the 56-page publication, e-mail drought@cdc.gov. An electronic version of the document is downloadable from the CDC's website at <http://www.cdc.gov/nceh/ehs/Publications/Drought.htm>.



Brachoria badbranchensis
At a Glance

Type: The genus *Brachoria* as presented here is the third-largest millipede genus in the U.S. with 34 described species.

Description: Blind, 4-6 cm. in length. Many species in this genus display conspicuous warning coloration in yellow, red, orange and violet that evolved to warn predators of toxic cyanide defense secretions.

Range: Throughout the southeastern U.S. Appalachian Mountains.

Millipede discovery

Species new to science unearthed at Bad Branch State Nature Preserve

By the Kentucky State Nature Preserves Commission

Not many species get their scientific name from the location they are found, at least not in Kentucky. That is the case, however, for the Bad Branch Mimic millipede, seen in the Pine Mountain area in 1987 and confirmed later by a graduate student.

“The first time I saw the dark millipede with yellow stripes in 1987 I marveled at its size and color,” said Joyce Bender, Nature Preserves and Natural Area branch manager of the Kentucky State Nature Preserves Commission (KSNPC).

Bender was new to Kentucky and to Pine Mountain and had no idea what kind of critters crawled through the Bad Branch State Nature Preserve.

“I learned that the millipede’s bright yellow stripes were a warning to predators that it used toxins as a defense mechanism. In this case, the toxin was cyanide,”



TOP and ABOVE: Three different color morphs of *Brachoria badbranchensis* have been observed, making the identification process difficult for even a trained eye. Photos by Paul Marek

Bender said. Now, several years later, the commission knows more about the millipede thanks to further research of the species.

In 2003, Paul Marek, a graduate student working on his doctorate and studying the millipede genus *Brachoria*, contacted KSNPC to seek permission to study them at Bad Branch.

Marek’s findings, published at http://www.apheloria.org/xfer/Marek_ZJLS_2010.pdf, identified 34 species occurring throughout the southeastern Appalachian Mountains. He found 10 new species, and five are within the Cumberland Mountains of Kentucky and Virginia.

Members of this genus look similar to the untrained eye and microscopic examination is needed for accurate identification. One of the species new to science was found at Bad Branch, and Marek named it the Bad Branch Mimic millipede or *Brachoria badbranchensis*. Three

different color morphs of this particular species have been observed, making the sorting process difficult even to a trained eye.

In Marek’s request to research the species he wrote, “As a taxonomist, I feel the utmost responsibility to go on these trips and collect millipedes for study and description.

“The combination of biodiversity loss and the slow rate of descriptions make for a nasty possibility—the complete ignorance of species,” he said.

Millipedes deserve much appreciation. They are decomposers on the food chain—they eat leaves and rotting logs and they help break down this coarse debris into finer materials—which is all part of nutrient cycling, an essential role in the forest ecosystem. Keep an eye out when you visit Bad Branch; you just might find the preserve’s namesake doing its job along the trail’s edge.



ABOVE: *Early construction of a vernal pond at Knobs State Forest and Wildlife Management Area in Bullitt County.*

FAR LEFT: *Spotted salamander eggs found in vernal ponds have a greater chance for survival due to lack of fish and higher order predators found in deeper, permanent ponds. LEFT:* *Vernal ponds located in woodlands provide critical habitat for terrestrial amphibians such as salamanders and tree frogs. KDF photos*

Vernal ponds spring to life on state forestlands

By Lynn True
Division of Forestry

The Kentucky Division of Forestry (KDF) provides a service that largely remains one of its best kept secrets—managing nearly 42,000 acres of forestland. In addition to assisting landowners, advising communities, fighting wildfires, inspecting timber harvests and growing tree seedlings, the KDF currently manages nine state-owned forests for the purpose of promoting good forest practices. These forestlands are managed to ensure biological diversity and sustainable use; therefore, a recent wetland initiative, created in cooperation with the U.S. Forest Service and the Kentucky Department for Natural Resources (DNR), was an easy fit.

The initiative to develop small wetlands, also called vernal ponds, was especially suited for state forestlands that do not have naturally wet areas. In fact, vernal ponds were already constructed at Tygart’s State Forest in northeastern Kentucky several years ago to make up for a lack of surface water due to karst topography. As a result of DNR’s initiative, a vernal pond was also recently constructed at Knobs State Forest in Bullitt County. This site was chosen because of the area’s hydrology—where water levels rise during heavy rainfalls, but run off just as quickly. KDF’s foresters agreed that the addition of a small pond at this state forest would serve well as a habitat for terrestrial amphibians.

Although the importance of vernal ponds is often overlooked, a closer look reveals just how significant this habitat is to a forest community. Approximately

one-half of all frogs and one-third of all salamander species rely on these temporary wetlands for development, as noted in *A Guide to Creating Vernal Ponds* by Tom Biebighauser, a wildlife biologist with the U.S. Forest Service Daniel Boone National Forest. Biebighauser also discusses how to build and maintain vernal ponds in his publication.

The effects of vernal ponds are complex, but the science of these small, ephemeral wetlands is really somewhat simple. Vernal ponds typically form in early spring (vernal) from snowmelt and rainwater. Most pools are dry for at least part of the year, but some remain partially filled with water over the course of a year or more. All vernal ponds, however, dry up periodically and therefore are usually devoid of fish.

Continued on Page 15

Conference bridges the gap toward revitalization

By Herb Petitjean
Division of Compliance Assistance

On Nov. 3, the Kentucky Brownfield Program hosted the “Exploring Community Revitalization in Central Appalachia” workshop at Greenbo Lake State Resort Park, near where three states (Kentucky, Ohio and West Virginia) and three U.S. Environmental Protection Agency regions (3, 4 and 5) meet. This conference brought together 29 individuals who represented the private sector, as well as governmental and nongovernmental agencies.

The brownfields of central Appalachia present great challenges but also offer many opportunities. However, the bureaucratic boundaries of states and regions often interfere with the exchange of information and strategies that could lead to the successful cleanup and redevelopment of these properties. This conference was an attempt to bridge these divisions. Conference attendees participated in breakout sessions on eight topics and presentations for seven successful projects happening in the region.

As a result of the conference, representatives from one community interested in redeveloping a landfill met with a consultant who completed an award-winning landfill redevelopment project in another region. Informative ideas were exchanged, and members of the Kentucky Brownfield



Val Page (left), with the Upper Guyandotte Watershed Association, serves as scribe while conference attendees brainstorm possible solutions for watershed issues that face Appalachia. Photo by DCA

Redevelopment Program made connections with a Federal Deposit Insurance Corp. representative who may be able to help them establish ties with the banking community.

Plans are currently being made for another conference in 2011.

Vernal ponds *spring* to life on state forestlands

Continued from Page 14

Despite being dry at times, once these pools fill, they are teeming with life, and the lack of fish and higher-order predators make them especially suitable for terrestrial amphibians like spotted salamanders and spring peepers. Crustaceans such as fairy shrimp, aquatic insects such as dragonflies, and mollusks such as snails also rely on these pools as a safe breeding ground to lay eggs, develop larvae, seek shelter and find food. Likewise, reptiles, birds and mammals benefit from vernal ponds as they periodically visit the areas, too.

Unfortunately, habitat destruction is a major threat to vernal ponds. Often,

these areas are mistaken for wasteland, and many landowners believe that filling, draining or digging out these areas improves wildlife habitat. These misconceptions can easily be corrected, however, and changing the public’s understanding of these habitats is one of the goals of DNR’s wetland initiative.

So, what can you do to protect vernal ponds? The best thing to do is avoid altering or disturbing the area. It is also advisable to leave a buffer of natural vegetation around the pond to help filter the water and provide areas for terrestrial amphibians to live. The vegetation also provides shade and a rich supply of

decaying leaves for food and shelter.

Creating and maintaining vernal ponds is perhaps the best way to help protect and promote these habitats. They make excellent additions to outdoor classrooms, visitor centers, managed woodlands and even home landscaping. Homeowners should be aware that the complexities of constructing a vernal pond range from choosing the type of digging tools to determining the soil type and obtaining appropriate permits. However, once constructed and maintained properly, vernal ponds will spring to life each year.

with the contractors, auditors and other vendors coming into their homes.”

KHP is not only beneficial to residents, but it will also create jobs in the ‘green’ building industry by providing an opportunity for contractors to enter the new market of energy efficiency home remodeling. Last year, more than 200 professionals involved in residential building gathered in Lexington to learn more about KHP and how they could be involved in promoting energy-efficient construction and retrofits.

In October, Gov. Steve Beshear announced the official launch of KHP in conjunction with the opening of Arronco Comfort Air’s new showroom in Lexington. Arronco installs environmentally friendly geothermal heating and cooling systems in Kentucky, and as a service provider for KHP, expects its business to grow, creating 20 new jobs by the end of 2011. It is anticipated that as many as 1,200 homes statewide will receive home-energy upgrades through KHP by March 2012.

“Kentucky Home Performance not only provides homeowners access to tools to reduce their homes’ energy use, it is adding new opportunities to the growing green jobs sector,” said Gov. Beshear. “I strongly encourage homeowners to take advantage of this unique opportunity to make changes in their homes that will have a lasting impact.”

In November, First Lady Jane Beshear visited the Lexington home of Larry and Melissa LeVine who are participating in KHP. Arronco Comfort Air conducted an energy evaluation, and the LeVines will be replacing their entire heating and cooling system with geothermal, as well as installing additional insulation and completing additional air sealing in their home.

“With everyone concerned about the carbon footprint, we are looking forward to seeing what we can do to lower ours,” said Melissa LeVine.

Gov. Beshear and First Lady Jane Beshear will continue to join KHP staff this winter to promote the program and participate in demonstration projects.



Burn wisely this winter

Continued from Page 1

aged for at least six months before burning. Seasoned wood is darker, has cracks in the end grain, and sounds hollow when smacked against another piece of wood.

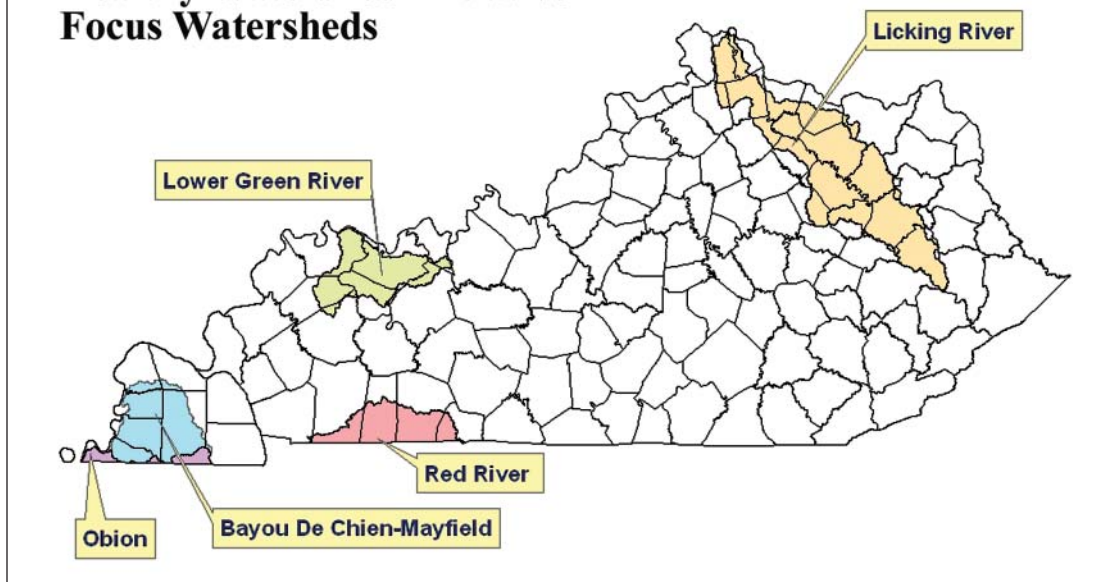
- **Choose the right firewood.** Hardwoods are the best. Never burn trash or treated wood that can emit toxic air pollutants.
- **Start it right.** Use only clean newspaper or dry kindling to start a fire. Never use gasoline, kerosene, charcoal starter or a propane torch.
- **Don’t let the fire smolder.** Many people think they should let a fire smolder overnight, but reducing the air supply does little for heating and increases air pollution.
- **Clean ashes from your wood-burning appliance.** Excess ashes can clog the air intake vents, reducing efficiency. Be sure to dispose of ashes in a metal container away from the house to reduce the risk of fire.
- **Keep your chimney clean.** A clean chimney provides good draft for your wood-burning appliance and reduces the risk of a chimney fire. Have a certified professional inspect your chimney once a year.
- **Follow instructions.** Operate your wood-burning appliance according to manufacturer’s instructions and follow all maintenance procedures. Keep the doors of your wood-burning appliance closed unless loading or stoking a live fire. Harmful chemicals, like carbon monoxide, can be released into your home.
- **Size matters.** Choose the right-sized appliance for your needs. If your wood-burning appliance is too big for your room or house, fuel will smolder and create more air pollution.

Never burn these things:

- Household garbage including cardboard, plastics, foam, magazines and wrappers. All of these produce harmful chemicals when burned, and may also damage your wood-burning appliance.
- Coated, painted or pressure-treated wood, which releases toxic chemicals when burned.
- Plywood, particle board or any wood with glue in or on it. They all release toxic chemicals when burned.
- Wet, rotting, diseased or moldy wood. Wet wood burns inefficiently and releases far more particulate matter into the air. Wood burns best when it has a moisture content of less than 20 percent.

To learn more, visit EPA’s Burn Wise website at <http://www.epa.gov/burnwise>.

Kentucky's Mississippi Bayou Healthy Watershed Initiative Focus Watersheds



Targeted Subwatersheds

Initiative protects local watersheds

By Crystal Renfro
Division of Conservation

Last year, the U.S. Department of Agriculture announced a new initiative to improve water quality and overall health of the Mississippi River Basin.

The focus of the Mississippi River Basin Initiative (MRBI) is to implement voluntary conservation projects over the next four years within targeted watersheds in 12 key states. The MRBI will help Kentucky landowners implement conservation and management practices that avoid, control and trap nutrient runoff from agricultural land. The watersheds selected were based on the potential for managing nitrogen and phosphorus while maintaining agricultural productivity and benefiting wildlife.

Participation in MRBI was made possible through a competitive process that partnered USDA's Natural Resources Conservation Service with local, state and national entities. The Kentucky Conservation Partnership, led by the Kentucky Division of Conservation, recognized the urgency of this issue and immediately submitted their conservation proposal to obtain financial assistance.

Out of 76 projects awarded nationwide, the Kentucky Division of Conservation was awarded three projects totaling \$3 million for fiscal year 2011. An additional \$500,000 will be made

available for each project in the next four years through the Kentucky Soil Erosion and Water Quality Cost Share program to focus on precision nutrient management. Over the four-year lifespan of the projects, incentive payments totaling \$25.5 million will be awarded to Kentucky landowners.

"The division is excited to provide leadership in this new conservation program that makes more resources, both technical and financial, available to Kentucky landowners who are concerned with correcting nutrient runoff problems on their property," said Steve Coleman, director of the Division of Conservation. "This once again demonstrates the value of the Kentucky Soil Erosion and Water Quality Cost Share program that provides the financial match required to bring this conservation assistance to landowners," he said.

The Kentucky Division of Conservation and the Kentucky Conservation Partnership are committed to improving water quality in each watershed and enhancing conservation outcomes on agricultural and nonindustrial private forest lands.

For more information, contact Steve Coleman at 502-573-3080 or e-mail steve.coleman@ky.gov

Kentucky currently has projects within 32 targeted subwatersheds that cover approximately 756,642 acres and include 2,800 landowners. They include:

- **Licking River Watershed**—which includes 12 subwatersheds in Bath, Fleming, Lewis, Mason and Nicholas counties.
- **Lower Green River Watershed**—includes 10 subwatersheds in Daviess, Hancock, Henderson, Hopkins, McLean, Ohio and Webster counties.
- **Mayfield Creek Watershed**—includes 10 subwatersheds in Ballard, Carlisle, Fulton, Graves and Hickman counties.

To date, 41 contracts have been funded in Kentucky covering 5,148 acres totaling \$1,592,915 in the first year, with remaining requests of \$4.2 million in unfunded applications.

KY EXCEL member provides field demonstration

By Mary Jo Harrod
Division of Compliance Assistance

KY EXCEL advocate member Micah Group Energy & Environmental (Micah Group), an established HUBZone-Certified Small Business Concern headquartered in Lexington, Ky., recently educated a number of Department for Environmental Protection employees on various equipment and techniques used in spill response, site investigations, remediation and correction action.

“We performed an environmental field day demonstration, geared mainly for the Kentucky Division of Waste Management staff as part of our KY EXCEL participation,” explains Aaron Jamison, Micah Group president. KY EXCEL advocate members are required to complete at least one voluntary environmental project each year.

The demonstration included the use of ground-penetrating radar, or Geoprobos, that are used for groundwater and soil sampling. The radar locates utilities, vaults and tanks.

Other activities included soil/groundwater sampling with a track-mounted probe (direct push technology); fluid injection via direct push technology for in-situ remediation; drilling, installation and the proper abandonment of a groundwater monitoring well; a static equipment display; an environmental response trailer demonstration on asbestos, lead, mold, petroleum, chemical and hazardous waste; and a vacuum truck demonstration used to pump liquid and other contaminant extractions (enhanced fluid recovery).

“We thought this would be worth doing, and we have had a great response,” says Gil Alexander, program manager Environmental Services.

Micah Group investigates and remediates environmental and energy concerns and implements sustainable ideas for future facility management. Jamison founded the firm in 1998 to provide quality soil, groundwater assessment, environmental construction, demolition and remediation services to the government and the private sector. The firm represents petroleum and industrial clients across the Commonwealth of Kentucky and surrounding states. Additionally, Micah



ABOVE AND BELOW: Kentucky Division of Waste Management staff watch a demonstration by Micah Group representatives on direct push/drill rig used to sample soil and groundwater. Photos by Micah Group



Group holds prime contracts with the federal government for energy and environmental solutions at sites located throughout the United States.

NEW KY EXCEL MEMBERS

A number of businesses, individuals, organizations and communities have recently elected to become environmental leaders by joining KY EXCEL, Kentucky's voluntary environmental leadership program. For more information on becoming an environmental leader call 1-800-926-8111 or visit <http://www.dca.ky.gov/kyexcel/>.

Advocate

ATC Associates—Simpsonville
American Commercial Lines
Inc.—Louisville
Bluegrass Greenworks—
Lexington
Paducah Gaseous Diffusion Plant
Citizens Advisory Board—
Paducah

Partner

Keeneland Association Inc.—
Lexington
DRS Environmental Systems
Inc.—Florence

Awards

Individuals, organizations honored at Governor's Conference on the Environment

The Energy and Environment Cabinet recognized individuals, organizations and businesses that have shown a commitment to exemplary environmental performance with the 2010 Environmental Excellence Awards. The awards are given out each year during the Governor's Conference on the Environment.

"Honoring those individuals and organizations that make outstanding efforts toward environmental stewardship is a way to demonstrate to others that protecting and working toward a clean and healthy environment is good business and good for business," said Energy and Environment Cabinet Secretary Len Peters.

The following is a list of six award winners in four categories:

- **2010 Resource Caretaker Award**—**National Office Furniture of Fordsville**, for their diverse efforts to reduce the facility's environmental impacts, including changing to water-based finish coatings, installation of high-efficiency heating systems, reducing water and sewer use, eliminating chemicals and diverting solid waste.

- **Community Luminary Award**—**The Kentucky NEED Project**, for conducting a community-based environmental education program that has reduced greenhouse gas emissions by more than 80 million pounds and has educated more than 135,000 Kentucky residents about the connection between energy efficiency and protecting our environment.

- **KY EXCEL Champion Award**—**Russellville Mayor Gene Zick**, for his leadership in implementing a rain harvesting system using rain barrels and rain gardens; constructing a 'green' fire station; constructing a community park on previously contaminated land; and converting storm debris into mulch that was later used in community gardens.

The Environmental Pacesetter Award recognizes efforts to protect the environment, conserve resources and set an example of environmental stewardship. This year, three recipients include:

- **Louisville Gas & Electric and Kentucky Utilities**—for creating a program to motivate its employees to save energy and reduce waste at their homes and in the office. Monthly green themes have included energy efficiency, Earth

Day, volunteerism, greening your backyard, recycling and green holidays.

- **Shoffner and Mars LLC**—for voluntarily remediating a 14-acre historic landfill on their property in Middlesboro, which had been leaching contaminants into the environment and was threatening nearby Yellow Creek. The property now supports commercial activities and is an asset to the community.

Continued to next page

City of Frankfort receives Stewardship Award

By Evan Satterwhite
Department for Natural Resources

A beautifully landscaped entrance and new signage provide visitors with only brief first impressions of a breathtaking place located just off U.S. 127 North in Frankfort. Cove Spring Park draws hikers, canines and their owners, and nature lovers who enjoy 100 acres of wetlands, streams, waterfalls, bottomlands, forested coves and trails.

Once in danger of being lost to development, Cove Spring Park is now a model for other communities to emulate. On any given day during the warm-weather months, groups and families meet under the covered pavilions to eat, as well as enjoy education and recreational activities that include scheduled wildflower walks and programs on insects, stream biology, birds, mammals, wetlands and various other topics.

Purchased with Kentucky Heritage Land Conservation and city of Frankfort funds in 2001, the park is also home to rare and endangered species that are currently being protected (as their locations are undisclosed), including the Globe bladderpod (*lesquerella globosa*), Svenson's Wildrye (*Elymus svensonii*), and Braun's Rockcress (*Arabis perstellata*). The property also includes two historical sites—the city of Frankfort Waterworks and the Cove Spring farmstead.

Future plans for the park include the extension of trails, an additional 20-acre purchase of adjacent property and the construction of additional shelters, interpretive displays and signs.

ABOVE: Hurst Falls at Cove Spring Park. Photo by Andrew Cammack, park manager.



Individuals, organizations honored at Governor's Conference on the Environment *Continued from previous page*

- **Calvary Elementary**—for initiating a schoolwide recycling effort and reducing the amount of waste it sent to the landfill by 85 percent.

Additional awards include:

- **Energy Leadership Awards—Warren County Public Schools and Kenton County Public Schools.** Warren County Public Schools increased energy efficiency within its buildings by implementing energy-saving programs that avoided more than \$5.4 million in energy costs. Warren County Public Schools is home to 11 ENERGY STAR school buildings and recently opened Richardsville Elementary, which is the first net-zero energy school in the nation, producing as much energy as it consumes in a year through the use of photovoltaic (solar) panels.

Kenton County School District is also home to six ENERGY STAR school buildings and recently opened Turkey Foot Middle School, designed to be a net-zero energy school that will produce as much energy as it consumes in a year through

photovoltaic (solar) panels.

- **Stewardship Award—City of Frankfort**, for the city's efforts to preserve Cove Spring Park (see article on Page 19).

(Left to right) John Davies, Department for Energy Development and Independence, presents the Energy Leadership Award to Chris Baker and Rob Haney from Kenton County School District.

Photo by Creative Services



Students find inspiration in the environment

By Mary Jo Harrod
Division of Compliance Assistance



The winners of the Kentucky Department for Environmental Protection's (DEP) 2010 Green Art Contest have been selected. The contest was open to eligible Kentucky high-school juniors and seniors who created art using the contest themes of natural resources and environmental management. Students were encouraged to submit painting/printwork, sculpture, pottery and photographs, with one winner for each submitted art type within each category.

"The purpose of the annual contest is to encourage high school students to think about the environment and inspire them to include the environment in their artwork," said R. Bruce Scott, DEP commissioner.

Winning entries were submitted by Verena Burger of West Jessamine High School in Nicholasville; Kellie Gjuraj, Luke Francis and Chelsea F. Gess of Bryan Station High School in Lexington; and Carrollyn Ricketts and Emily Rowan of North Bullitt High School in Shepherdsville.

The winning artwork is currently displayed in the DEP Training Center in Frankfort, where it will be viewed by hundreds of visitors annually.

LEFT: Emily Rowan's tree artwork was selected in the sculpture category. Rowan writes, "I wanted to focus on natural materials and the fact that everything comes from the Earth and will eventually return back to its origins. I tried to use a fair mixture of natural plant matter and recyclable materials. I used some metal components, under the pretense that metals come from the Earth as well. Trees are such a beautiful symbol; they portray strength in Mother Nature's subtle, majestic way." Photo by Aaron Keatley



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Seedling nurseries: growing trees for healthy and productive forests



One of the most impressive broadleaf trees grown in the Division of Forestry's state nurseries is the American sycamore (*Platanus occidentalis*). Its winter brilliance, shedding bark and growth potential make the sycamore one of the most identifiable trees in the state and the perfect tree to feature in this issue of *Land, Air & Water*.

The American sycamore has broad, maple-like leaves and a trunk and limb complexion of mixed green, tan and white. It is a member of one of the planet's oldest clan of trees (*Platanaceae*), and a living sycamore tree can reach 500 to 600 years old. Because of their preference for moist

sites, sycamores are among the best species to select for restoring streamside riparian zones. Sycamores are also commonly planted in yards because of their shade-tree quality.

Seedling orders for the American sycamore and approximately 30 other species are still being accepted by the Division of Forestry. Orders will be shipped from late winter through early spring. To obtain an order form, visit <http://forestry.ky.gov/statenurseriesandtreeseedlings/Pages/default.aspx> or call 1-800-866-0555.

Just the Facts: American Sycamore (Platanus occidentalis)

- **Growth:** The American sycamore is one of the simplest trees to grow and transplants like a dream. They are deciduous, fast-growing and sun loving and can reach 75-feet to 100-feet tall. Be forewarned—the sycamore should only be planted as a single yard specimen or in places where space is not a premium.
- **Sites:** The American sycamore is site tolerant and can grow under nearly any condition but is best adapted to creek banks.
- **Range:** Sycamore occupies one of the largest north-south ranges in North America - from Canada to Florida.
- **Human Uses:** Although sycamore trees are not good for construction, they are highly prized as butcher blocks. They are also commonly used as an ornamental. In fact, a hybrid developed from the American sycamore, called the London planetree, is one of the most common urban trees in North America and Europe.
- **Wildlife Uses:** As long-lived members of the riparian forest community, sycamores offer many opportunities to native animals. Raccoons, opossums, squirrels and wood ducks are common inhabitants of sycamore cavities. The open branching pattern and sheer size of older sycamores also creates a good location for Great Blue Heron nests and other birds found at the water's edge.
- **Tree Trivia:** Native Americans used the whole trunk of sycamores to make dugout canoes. One of these canoes was reported to have been 65-feet long and weighed 4 1/2 tons.