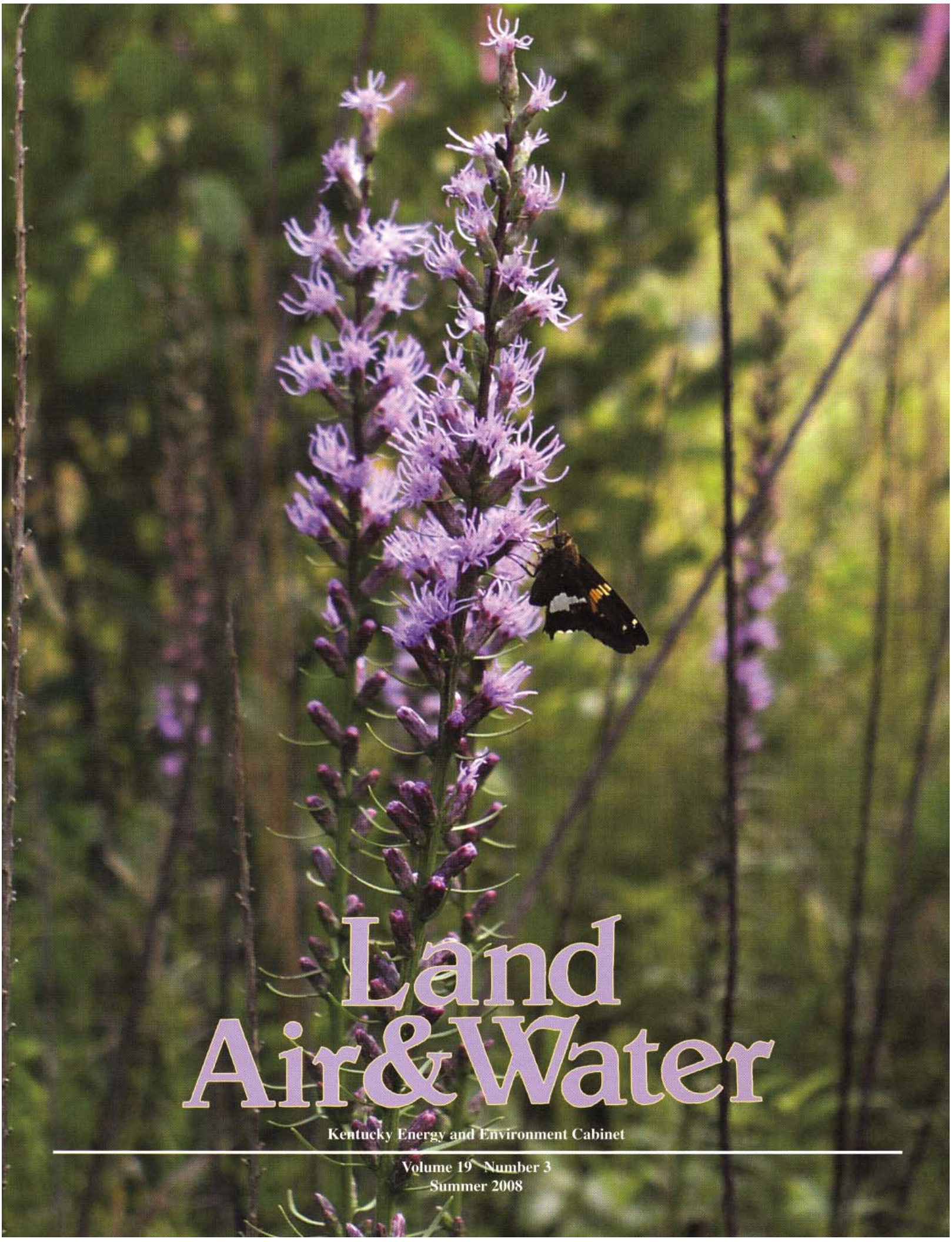

Land Air & Water

Kentucky Energy and Environment Cabinet

Volume 19 Number 3
Summer 2008

Land Air&Water
since 1988

Commonwealth of Kentucky
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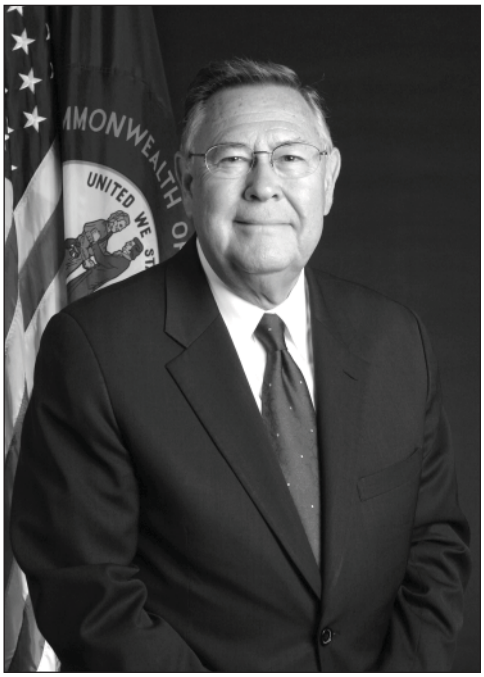
Cabinet reorganized, Peters to head Energy and Environment Cabinet

In June, Gov. Steve Beshear announced a reorganization of the Environmental and Public Protection Cabinet. The reorganization is being done in order to provide better access to services for the people of Kentucky.

Governor Beshear announced:

- The Department of Labor is re-established as the Labor Cabinet and is headed by Secretary J.R. Gray.
- The Department of Public Protection is re-established as the Public Protection Cabinet, headed by Secretary Robert D. Vance.
- The Energy and Environment Cabinet is established. This cabinet will consist of the Department for Environmental Protection, the Department for Natural Resources and the Department of Energy Development and Independence and is headed by Dr. Len Peters.



Dr. Len Peters

Dr. Peters is an internationally renowned chemical engineer with demonstrated leadership in research, academia and management. He served for the past five years at the Battelle Memorial Institute in Columbus, a leading nonprofit applied science and technology development company.

During his tenure at Battelle, Dr. Peters was senior vice president and director of the Pacific Northwest National Laboratory, where he oversaw a staff of 4,200. Under his leadership, he realigned the laboratory's research priorities to meet the needs of its diverse customer base.

Dr. Peters has held senior academic and administrative positions at leading universities, including Virginia Tech and the University of Kentucky. He holds a doctorate in chemical engineering from the University of Pittsburgh and is a prolific author and lecturer.

Dr. Peters has been recognized for his achievements with honors ranging from the National Science Foundation Award to the Oak Ridge Associated Universities' Outstanding Leadership Award.

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Land Air&Water

Volume 19 Number 3
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Features

Our Cover

A Silver-spotted skipper (*Epargyreus clarus*) rests on a Spiked blazing star (*Liatris spicata*) in the Pennyrile State Forest. Photograph by Martina Hines, Kentucky State Nature Preserves Commission.

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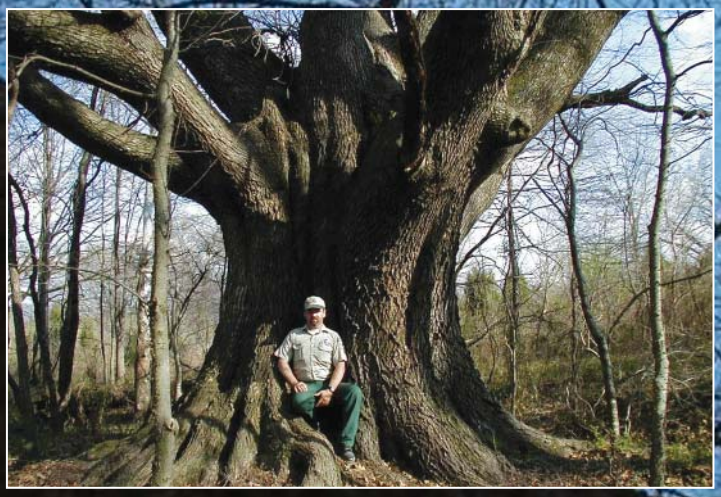
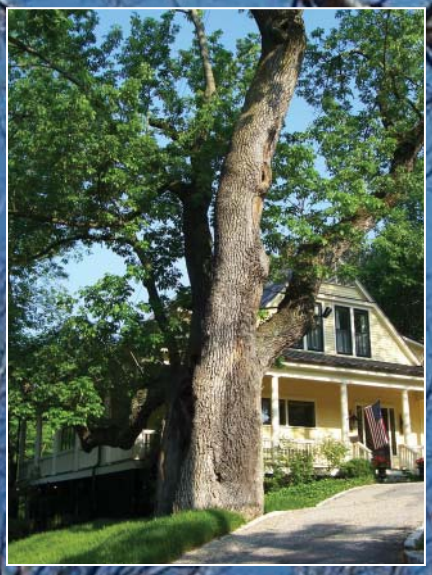
Contents

Kentucky's quiet giants

By Diana L. Olszowy
Division of Forestry





BACKGROUND: ***Champion bigtooth aspen in Rockcastle County.***
UPPER RIGHT: ***Cherrybark oak in Carlisle County.***
ABOVE: ***White ash in Jefferson County.*** Division of Forestry photos

Chances are you've seen at least one of these trees in a city park, cemetery or even in your own backyard. Some have been around since Daniel Boone roamed the state while others have been around since before our country was founded. These magnificent giants capture our imagination for their size and strength; however, there's more to a champion tree than just its size. They are symbols of all the good work trees do for the quality of the environment and our quality of life. Big trees provide more cooling shade and more places for wildlife to perch and nest. They sequester more carbon dioxide, trap more pollutants and purify more water.

Although most trees can outlive humans—100 to 200 years is not unusual—they succumb to age, disease and insects, wind, rain, drought, and, all too often, the chainsaw buzz of development. All trees work hard to improve our environment, and it's our responsibility to maintain a healthy environment that allows trees to grow to champion status.

Continued on next page

LEFT: ***This sassafras tree in Daviess County stands 77 feet tall and is 270 inches in circumference.***
BELOW: ***Chad Brothers, a ranger technician with the Division of Forestry, stands next to the champion green ash located in Estill County.*** Division of Forestry photos

In 1940, the American Forests Foundation began a search for the largest species of American trees. This list, now called the National Register of Big Trees, contains the names of more than 750 species (11 of which are from Kentucky).

The Kentucky Division of Forestry began compiling a list of state champions in 1968. The first list contained the names of only 51 species. Today the list, which is restricted to only native or naturalized species in Kentucky, has more than 100 species reported. This list is continuously updated as new giants are discovered or old faithfuls fall. (Read the Jones' story on Page 15, *Right in their own backyard*.)

Kentucky state champions are restricted to tree species listed in *Trees and Shrubs of Kentucky* by Mary Wharton and Roger Barbour, dated 1994.

Do You Have a Champion Tree?—To nominate a tree, the species must first be identified and properly measured. The following instructions for measuring your tree are simple. However, you may contact the Division of Forestry district office nearest you for assistance.

Circumference—The tree's trunk should be measured at a point 4.5 feet above the ground. If the tree forks below 4.5 feet, it is considered as two trees and only one fork can be measured. If the tree forks above 4.5 feet, it is considered as one tree.

Height—An estimation of height can be made using a yardstick. First, measure 100 feet from the tree. Next, hold the yardstick vertically, 25 inches from the eye. Align the zero-inch mark on the yardstick at the base of the tree and note the inch mark that aligns with the top of the tree. Every inch equals 4 feet.

Crown Spread—To determine a tree's average crown spread, first find the points in the tree's crown that are widest and narrowest. Walk beneath the tree and visually assess where the tree's branches extend the farthest from the trunk. Drive a stake into the ground directly beneath this point. Following a line directly through the center of the tree's base, find the opposite side of the crown's widest point. Stand directly beneath the outer edge and drive a second stake into the ground. To determine the narrowest spread in the crown, find where the outer edge of the crown's branches is closest to the trunk and drive a stake into the ground. Do the same to find the opposite side of the crown and mark it. Measure the number of feet between the stakes marking the crown's widest dimension and narrowest dimension. Add the two numbers together, divide by two, and the result is the tree's average crown spread.

Total Your Points—Add together the points for the tree's circumference, tree's height and one-quarter of the average crown spread. The result is your tree's total point index.

For example: a sugar maple's circumference (in inches) = 120; height (in feet) = 80; average crown spread (in feet) divided by 4 = 60/4 = 15. Total index points: 215.

After determining the index points for your champion tree nominee, contact the district office that serves your area and make arrangements for a forester to certify your results and submit your nomination.

To compare your large tree to other state champions or to see how many big trees are in your county, visit the Division of Forestry's Web site at http://www.forestry.ky.gov/programs/Do+You+Have+a+Champion+Tree.htm or call 800-866-0555 for additional information about Kentucky's Champion Tree Program.

For information on the proper care and maintenance of big trees, read the article *R_x for Trees* on Page 17.

Community leaders, state officials and U.S. EPA representatives stand with 3M Cynthiana management and corporate officials during the ceremony to mark the company's acceptance into the KY EXCEL and Performance Track programs. Photo provided by DCA

3M Cynthiana is an environmental leader in Kentucky

By Lisa Barker and Mary Jo Harrod
Division of Compliance Assistance

The 3M Cynthiana facility, which joined the Kentucky Department for Environmental Protection's environmental leadership program KY EXCEL at the master level, was recently accepted into the U.S. Environmental Protection Agency's (EPA) Performance Track Program. Membership in both programs is a result of voluntary actions that the facility is taking to improve Kentucky's environment.

"3M Company has a long history of environmental stewardship, and at 3M Cynthiana, we are proud our contributions mirror those efforts here in Kentucky," said Jason E. Orr, CSP, EHS manager at 3M Cynthiana. "We are honored to be accepted into the KY EXCEL program, and we are excited for the challenges to reduce our environmental impacts in the future."

This makes a total of 20 locations in the Performance Track Program for 3M Company, which produces Post-it notes and Scotch brand tape.

Through its Performance Track, the EPA recognizes and rewards businesses and public facilities that demonstrate strong environmental performance beyond current requirements. Performance Track is a voluntary public-private partnership that encourages continuous environmental improvement through the use of environmental management systems, local community involvement and measurable results.

Local dignitaries, civic leaders and others from the community, appointed and elected state officials and U.S. EPA Region IV representatives recently gathered with 3M management and corporate officials at a ceremony to mark the company's acceptance into the KY EXCEL and Performance Track programs.

KY EXCEL

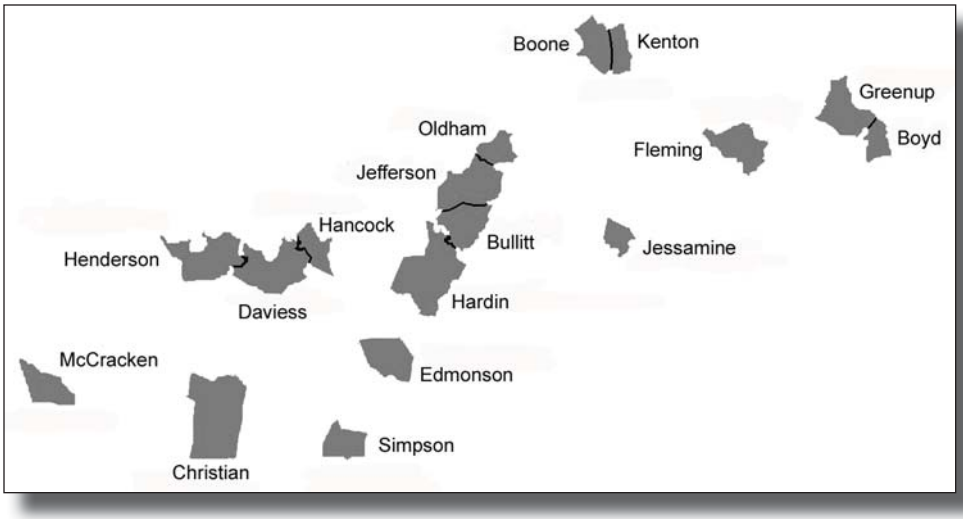
KY EXCEL offers unlimited opportunities for public, corporate and private sectors to improve Kentucky's diverse and unique environment through environmental leadership. Call 800-926-8111 to join KY EXCEL's 141 members in 44 counties as an environmental leader.

The environmental goals set by the company include a 10 percent reduction in energy, a 10 percent reduction of non-hazardous waste, a 4 percent reduction in total volatile organic compounds and a 3 percent reduction in total hazardous waste generation.

These goals are in addition to an already strong environmental track record that 3M Cynthiana has with Underwriters Laboratories Certification to the ISO 14001 environmental standard, which refers to the environmental management system 3M has in place. One of the company's future goals is to pursue sustainability.

Beyond doing the right things to stay in compliance with regulations and permits or reducing the bottom line for the facility, having a positive impact on the environment will benefit future generations and create a good neighbor reputation that cannot be purchased for a business in the community.

Kentucky is making a name for the commonwealth as an environmental leader. Environmental leadership is also environmental protection.



LEFT: ***Seventeen counties are currently in violation of the new standard based on monitoring data from 2005-2007—Boone, Boyd, Bullitt, Christian, Daviess, Edmonson, Fleming, Greenup, Hancock, Hardin, Henderson, Jefferson, Jessamine, Kenton, McCracken, Oldham and Simpson.***
Map provided by the Division for Air Quality

EPA announces more stringent ozone standard

Good news for public health

By Elizabeth Schmitz
Division for Air Quality

A new ozone standard, revised to further protect public health, went into effect in Kentucky May 27. Ozone is "good up high, bad nearby." Ozone is a naturally occurring gas, and in the upper levels of the Earth's atmosphere, it protects us from the harmful rays of the sun. At ground level, additional ozone is formed when nitrogen oxides and volatile organic compounds (released from fossil fuel combustion and other activities) join together in the presence of heat and strong sunlight. Breathing ozone harms the lungs and can make it difficult to breathe.

On March 12, 2008, the U.S. Environmental Protection Agency (EPA) issued their final rule changing the National Ambient Air Quality Standards (NAAQS) for ozone from .080 ppm (parts per million) to .075 ppm.

States must submit recommendations to EPA on air quality designations under the new ozone standard by March 2009. EPA will announce which counties meet the standard in March 2010. Kentucky will need to demonstrate how counties that do not meet the standard will achieve the standard, and will submit those plans to EPA in 2013.

Based on existing monitoring data (2005-2007) 17 counties (noted above) are in violation of the standard. However, designations will be made based on the 2007-2009 monitoring data. Additional counties may be included due to their "contribution of emissions" to an area in violation. The counties of Fayette, Campbell, Warren, Madison, Clark and Mercer could ultimately be included.

True impacts of the standard will not be known until final designations are made by EPA in June 2010. The economic impacts are unknown, but it is common knowledge that new major industry releasing nitrogen oxides and volatile organic compounds will not locate in nonattainment areas due to the more stringent air quality permitting requirements for these areas.

The Division for Air Quality will begin touring affected counties at the conclusion of the 2008 ozone monitoring season, which runs from March 1 through Oct. 31. Staff will be advising local officials of the impacts and process involved with the nonattainment designations.

The Air Quality Index (AQI) now reflects the new standard. This will result in more orange, red and purple AQI days.

"Even though we can expect more Air Quality Alert Days, it is important to realize that air quality is not getting worse, but rather that we need to further clean up our air to protect public health," stated John Lyons, director of the Division for Air Quality.

The current AQI can be viewed at http://www.air.ky.gov.

With ozone standard finalized, EPA looks at lead

On May 1, 2008, EPA proposed to substantially strengthen the national ambient air quality standards (NAAQS) for lead. The proposed revisions would improve health protection for at-risk groups, especially children. Children are particularly vulnerable to the effects of lead.

Exposures to low levels of lead early in life have been linked to effects on IQ, learning, memory and behavior. There is no known safe level of lead in the body. Lead that is emitted into the air can be inhaled or, after it settles out of the air, can be ingested. Ingestion is the main route of human exposure, particularly since heavy metals bio-accumulate in the food chain. Once in the body, lead is rapidly absorbed into the bloodstream and can affect many organ systems.

The Division for Air Quality does not anticipate any exceedance for the new proposed lead standard. EPA has indicated that the proposed amended lead NAAQS will be 0.10-0.30 micrograms per cubic meter on a monthly average. During a press conference, EPA said they may look at the second maximum reading for the month.

Currently, the division analyzes the PM_{10} (particulate matter 10 microns in diameter or smaller) data collected at five sites in Kentucky for specific pollutants, including lead. The maximum lead readings in Kentucky are generally a magnitude of 10 below the lowest proposed standard.

Are there drugs in your drinking water?

Proper disposal key to public protection

By Frank Hall
Division of Water

Recent news stories have alerted consumers to the potential presence of trace levels of pharmaceuticals in tap water supplies on a global scale. Some Kentucky consumers have contacted their local water suppliers and the Kentucky Division of Water (DOW) with questions about these "emerging contaminants" in their drinking water. This article contains information about what these pharmaceuticals are, their potential health impacts and the proper disposal of pharmaceuticals and personal care products.

What are these contaminants in raw source water?

Pharmaceuticals and personal care products, known in the water industry as PPCPs, refers, in general, to any product used by individuals for personal health or cosmetic reasons or used by agribusiness to enhance growth or health of livestock. PPCPs comprise a diverse collection of thousands of chemical substances, including prescription and over-the-counter therapeutic drugs, veterinary drugs, fragrances and cosmetics.

Is it in my drinking water?

While studies have shown that low levels of pharmaceuticals are present in our nation's rivers, lakes and streams, it is vital to remember that we are discussing raw source water as opposed to finished tap water that goes out to consumers as potable water. Today, water professionals have the technology to detect more substances—at lower levels—than ever before. As analytical methods improve, many compounds are being found at extremely low levels, typically single-digit parts per trillion. Drinking water standards are typically set in the parts per billion range, which is 1,000 times higher.

How do these pharmaceuticals enter the raw source water?

There are two main routes for pharmaceuticals to enter the environment. The first is from human waste containing unmetabolized pharmaceuticals discharged from wastewater treatment plants. The second is through the disposal of expired or unwanted medicines. This disposal often occurs from pouring medications down the drain or in household garbage that is in turn sent to the landfill. These contaminants then migrate through the stream flow or groundwater table.

Water is an important part of a healthy lifestyle. Most finished tap water is considered potable water and contains extremely low levels of pharmaceuticals. Photos by Cindy Schafer

What water treatment options exist for pharmaceuticals?

Treatment options are generally specific to the compound being removed. For pharmaceuticals that are synthetic organic compounds, the most effective methods are granular activated carbon, powdered activated carbon, reverse osmosis and nanofiltration. These are not radical new water treatment options; they are established options currently being utilized by water treatment plants to remove currently regulated contaminants.

How can I dispose of these potentially harmful products?

1. Do not flush unused medications down the toilet or sink. Consumers were once advised to flush their expired or unused medications; however, recent environmental impact studies report that this could be having an adverse impact on the environment. While the rule of thumb is not to flush, the Food and Drug Administration has determined that certain medications should be flushed due to their abuse potential. Read the instructions on your medication and talk to your pharmacist about how to properly dispose of your unused medications.

2. When tossing unused medications, protect children and pets from potentially negative effects. The American Pharmacists Association recommends that consumers:

- Crush solid medications or dissolve them in water (this applies for liquid medications as well) and mix with kitty litter or sawdust (or any material that absorbs the dissolved medication and makes it less appealing for pets or children to eat), then place in a sealed plastic bag before tossing in the trash.

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Leading by example

KY EXCEL members' projects are good environmental leadership examples

By Mary Jo Harrod
Division of Compliance Assistance

KY EXCEL members continue to be creative with the projects they choose to benefit the environment, proving that there is a variety of ways for any company or individual to participate in Kentucky's environmental leadership program.

John Eisiminger and his family, of Lawrenceburg, are advocate members of the KY EXCEL program. John and his wife, Misty, wanted to teach their son, Jared, age 3, and his cousins the value of recycling. Their project is recycling aluminum cans that they use at home and find littering the area.

"When we go for a walk in the community park," explained John, "Jared will either ride in his wagon or on his bicycle and look for cans to pick up. Then we'll take them home, crush them and put them in a bag to take to the local recycling center to sell."

Though it may slow the process, Jared likes to pull the handle on the can crusher, which helps him to feel involved and take ownership of the project. When his cousins from Louisville come to visit—Emmy, age 6; Lily, 5; and Bo, 3—they participate in the collecting and crushing of the cans, too. Not only is this a learning experience, but the kids enjoy it. So far, the family has collected about 30 pounds of aluminum.

Master member **E.ON U.S.** has five facilities that are active in the program—Mill Creek, Magnolia Station, Tyrone Station, Trimble County and Paddy's Run.

At the Trimble County facility, the company has set aside 114 acres for a wildlife preserve in the northwest corner of the plant bordering the Ohio River. The area has wetland and forested areas with an abundance of red foxes, raccoons, opossums, turkeys and white-tailed deer.

In other areas, the company has encouraged the growth of native grasses and flowers in the rights of way where the growing conditions are favorable by reintroducing those plants and maintaining them.

"E.ON U.S. has a long history of being aggressive in its efforts to protect the environment," said Sharon Dodson, director of Environmental Affairs for E.ON U.S., parent company of Louisville Gas and Electric Co. and Kentucky Utilities Co. "By taking concrete actions to meet mandatory and voluntary commitments to protect our natural resources, we strive to improve our surroundings today for generations to come."

The company is doing its part to ensure that the peregrine falcon, the world's fastest bird, is no longer headed toward extinction, by providing platforms or nest boxes for the birds at several of its facilities.

ABOVE: ***A peregrine falcon perches on a platform provided by E.ON U.S. employees.*** Photo by E.ON. U.S.

ABOVE LEFT: ***Laura Burford with the Department of Fish and Wildlife Resources and Ron Bethany with Louisville Gas and Electric band a falcon.*** Photo by E.ON. U.S

TOP: ***Jared picks up aluminum cans that will be taken to the local recycling center.*** Photo by John Eisiminger

The Green Energy program provides an opportunity for residential and commercial customers to voluntarily pay for the development and use of renewable energy from sources such as capturing and using landfill gas to generate electricity, biomass energy generation, hydroelectric power, wind power and solar power.

Continued on Page 7

Leading by example *Continued from Page 6*

Another project is Project Warm, which winterizes at least four homes by caulking windows and providing weather stripping to prevent loss of heat.

At the Mill Creek Station, coal combustion byproducts are recycled as filler material for a former sand mine. Once the mine is filled, the land will be covered with soil, seeded and donated as a community green space.

E.ON U.S. also supplies 25 dumpsters for the Valley Village Dumpster Day for the community to dispose of its waste, and will plant 14 trees at the boundary of the plant in a beautification effort.

A sign hangs within North American Stainless that encourages its employees to "Be a part of the Green Team" and make a commitment to recycling. Photo provided by North American Stainless

North American Stainless (NAS), a leader member from Carroll County, is a steel mill manufacturer of both stainless steel flat and long products from recycled stainless scrap. For one of its KY EXCEL projects, NAS participated in a 2007 river sweep event and promoted environmental awareness by sponsoring a poster competition for grades K-4, middle school and high school categories with savings bonds for first, second and third places. The posters illustrated the importance of maintaining clean waterways and a clean environment. In addition, NAS, with the support of other local companies, supplied prizes and lunch for everyone who participated in the event. However, the biggest winner of all was the environment with approximately 80 cubic yards of trash being picked up over a 10-mile stretch of the Ohio River.

NAS, as another project, is a lifetime member of Raptors Inc. sponsoring a program that rehabilitates injured birds. NAS also provides the use of undeveloped company property for the release of those birds.

Though operations at NAS are based on the premise of recycling, the company continues to work at improving its own recycling efforts in many ways. It substantially increased the reuse of wooden skids and metal shot, and launders rags, gloves and specific personal protective equipment rather than trashing them. Employees are separating cardboard, plastic and metal at the points of generation. Larger industrial waste streams containing baghouse dusts, scale and refractory brick are being recycled. Since March 2007, NAS has increased the percentage of waste recycled by nearly 8 percent.

"North American Stainless is committed to the recycling endeavor," said Antonio Pacheco, president of NAS. "The success of the program is the direct result of individual employee commitment, corporate support and the forming of strategic partnerships with select recycling facilities."

NAS has also instituted a recycling work group within the company and is publishing the recycling efforts in the quarterly newsletter to inform all employees of the latest recycling strategies and to track the company's recycling success.

For more information about the KY EXCEL program, call 800-926-8111 or visit http://www.dca.ky.gov/kyexcel/.

New KY EXCEL Members

Since January 2008, a number of businesses, individuals, organizations and communities have elected to become environmental leaders by joining KY EXCEL. Setting a positive example, these new members have committed to a variety of projects to improve and protect Kentucky's environment that go beyond environmental regulations. Be an environmental leader and join KY EXCEL today.

Advocate

Russell Area Technology Center—Russell
Saint Agnes Parish—Louisville
The Kentucky NEED Project—Crestview Hills
WKYT-TV—Lexington

Leader

General Motors Bowling Green Assembly—Bowling Green
IT Springwire—Florence

Partner

Delta Air Lines Inc., SDF Station—Louisville
Emerson Power Transmission—GearCO—Maysville

Master

Kentucky Utilities Co.—Tyrone Generating Station (TGS)—Versailles
Louisville Gas and Electric Co.—Paddys Run Generating Station (PRGS)—Louisville

There's nothing like a big check

By Amanda LeFevre
Division of Compliance Assistance

The Kentucky Brownfield Program is pleased to announce that the U.S. EPA has awarded five Kentucky communities a combined total of $2 million in brownfield grants, which help communities inventory, assess and remediate contaminated or potentially contaminated properties. This marks the second year of success for Kentucky following a drought of brownfield money.

ABOVE: ***Representatives from five Kentucky communities accept their ceremonial checks from the U.S. EPA.***

LEFT (left to right): ***Alan Farmer, EPA Region 4; Susan Bodine, Office of Solid Waste and Emergency Response; Hank List, former Environmental and Public Protection Cabinet; Col. Glen Skeens, Owensboro Police Department; Abby Shelton, city of Owensboro; and David Lloyd, Office of Brownfields and Land Revitalization, hold a check for $600,000 that will be used to clean up properties in the Owensboro area.***

Photos provided by DCA

In 2007, Louisville and Frankfort received $1.4 million in assessments and revolving loan fund grants. This year 10 grants, representing a variety of projects, were awarded.

- Owensboro received three grants totaling $600,000 to clean up properties that will be the future home of the city's public safety operations and training center.
- Buffalo Trace Area Development District was awarded a $200,000 hazardous waste assessment grant to inventory sites in its service region and assess properties with redevelopment potential.
- Louisville received $200,000 for the assessment of sites with petroleum-related issues.
- The Letcher County Conservation District will use $400,000 in hazardous waste and petroleum assessment grants to assess sites impacted by abandoned coal mines and petroleum-related industries.
- Covington received $200,000 for cleanup of the former Donaldson Art Sign property. The city also received $400,000 for assessment of properties impacted by petroleum and hazardous waste.

The national grant announcement was held in April at the Donaldson Art Sign property. All five Kentucky communities were on hand to receive their ceremonial checks. Susan Bodine, assistant administrator with the Office of Solid Waste and Emergency Response, and David Lloyd, director of the Office of Brownfields and Land Revitalization, led the ceremony. Alan Farmer, RCRA division director for EPA Region 4, delivered praise to Kentucky's Brownfield Program for its efforts in helping communities in their applications for brownfield grants. Hank List, deputy secretary of the former Kentucky Environmental and Public Protection Cabinet, congratulated the communities and offered continued support for Kentucky's brownfield redevelopment initiatives.

The next round of funding is quickly approaching, and grant guidance is anticipated in August. The Kentucky Brownfield Program invites all parties interested in brownfield grants to participate in one of three upcoming grant writing workshops. These free workshops will detail how grants can be used and strategies for applying for the funds.

If you are interested in attending one of these sessions or have other questions relating to grant support or other services offered by the Kentucky Brownfield Program, contact Amanda LeFevre at 800-926-8111 or at amanda.lefevre@ky.gov.

Grant writing workshops

- Monday, Aug. 18, 2008
  9 a.m.–1 p.m.
  Cumberland Valley Area Development District—London, Ky.
- Tuesday, Aug. 19, 2008
  9 a.m.–1 p.m.
  Barren River Area Development District—Bowling Green, Ky.
- Friday, Aug. 22, 2008
  9 a.m.–1 p.m.
  Bluegrass Area Development District—Lexington, Ky.

Earth Day 2008

From awareness to action

By Ricki Gardenhire
Office of Communications and Public Outreach

Earth Day has put environmental challenges on the front burner nationally and in recent years, globally. In Kentucky, Earth Day is celebrated at daycare facilities, schools and on college campuses, at work and in the home. Kentuckians are moving past becoming environmentally aware and moving toward taking action.

This year, Kentucky state government issued a call to arms with the theme "Environmental Leadership: Go for the Green." The theme encouraged Kentuckians to take an active role in environmental protection—to exchange daily habits that are detrimental to the environment for ones that offer protection.

Robert Vance, secretary of the former Environmental and Public Protection Cabinet (EPPC) said taking a leadership role in making environmentally safe choices in the home and at work can pay dividends.

"It's important that adults continue to make decisions that reflect a respect for our world and teach our children and grandchildren the importance of environmental stewardship. Our children can learn from daily activities like recycling, conserving water, using compact fluorescent bulbs, turning off lights and unplugging electronics when not in use," said Vance. "We can find ways every day to demonstrate healthy habits that protect our environment."

From a Lexington neighborhood to a coal field in Panther outside Owensboro to a creek in Fort Wright, Secretary Vance and Gov. Steve Beshear participated in Earth Day events across the state. Here is a look back at the week-long events and announcements sponsored by the EPPC.

The new color of construction: green

The EPPC partnered with the Governor's Office for Energy Policy and the Home Builders' Association of Kentucky to show Kentuckians the benefits of 'green' construction and to announce the association's Green Build Kentucky program, a voluntary program that incorporates the National Association of Home Builders' green building guidelines and the federal ENERGY STAR program.

Gov. Beshear joined Secretary Vance in a walk-through of an ENERGY STAR home in Lexington. Because homes represent about one-third of the electricity usage in the nation, building more energy efficient homes can reduce pollution. Construction methods employed to build ENERGY STAR homes also

Continued on Page 11

***TOP LEFT:** Gov. Steve Beshear (left) and Robert Vance, secretary of the former Environmental and Public Protection Cabinet, announce a $1.6 million contract to clean up an abandoned mine site in Daviess County.*

***ABOVE:** Jamie Eggemeyer, assistant education manager for northern Kentucky Sanitation District No. 1, demonstrates for Gov. Beshear and Secretary Vance how permeable asphalt allows water to drain through it.*

***FAR LEFT:** Gov. Beshear blows insulation into an ENERGY STAR home in Lexington.*

***LEFT:** First lady Jane Beshear and Jonathan Miller (right), secretary of the Finance and Administration Cabinet, distribute environmental awareness bracelets to children during an event held at the Governor's Mansion.*

Photos provided by Creative Services

Earth Day 2008: From awareness to action

Continued from Page 9

address environmental issues like reducing the construction waste generated thereby reducing the cost of disposal to local governments, using low-water use fixtures that cut demand on water supplies and improving indoor air quality through a more tightly sealed home.

"Little Green Houses for You and Me..."

The People's Home, the Kentucky Governor's Mansion, is a shade greener thanks to efforts by first lady Jane Beshear and the Finance and Administration Cabinet.

On Earth Day, Mrs. Beshear announced simple steps Kentucky's first family is taking to help reduce their impact on the environment and to save money. Installing low-flow showerheads and energy-efficient light bulbs, washing clothes in cold or warm water, and turning off electronic devices and unplugging them when not in use are a few of the new habits being developed at the mansion. A new Web site, www.greenteam.ky.gov, outlines simple projects Kentuckians can do at home to become better stewards of the environment.

Reclaiming the Land

The Kentucky Division of Abandoned Mine Lands awarded a $1.6 million contract to Rust of Kentucky to eliminate the effects of an abandoned mine site in Daviess County. Gov. Beshear and Secretary Vance traveled to the community of Panther, located outside of Owensboro, to make the announcement. The project, covering 181 acres, will include grading coal waste to eliminate impounding potential, creating a lime barrier to neutralize acidity, covering the coal waste with earth cover, restoring the site with grasses and installing limestone armored ditches to carry and treat runoff into Brush Fork.

Reduce, Reuse and Recycle

The Division of Waste Management awarded 43 crumb rubber grants totaling nearly $1 million to schools, local governments, daycare facilities and other entities across the state. Gov. Beshear and Secretary Vance traveled to Dixon (Webster County), Florence (Boone County) and Uniontown (Union County) to talk about the economic and environmental benefits of recycling.

Crumb rubber, made from recycled scrap tires, is used as mulch on playgrounds, for fitness and walking tracks, landscaping and for reduction in soil degradation on athletic fields.

Protecting our Water

Improving water quality and preventing nonpoint source pollution in Banklick Creek, which runs through Boone and Kenton counties, is the goal of a $1 million grant presented to the Banklick Creek Watershed Council. The presentation took place at northern Kentucky's Sanitation District No. 1 in Fort Wright. While there, Gov. Beshear and Secretary Vance took a tour of Public Service Park, a national model for environmental outreach that features a vegetated roof, permeable paver system, asphalt and concrete, biofiltration, a wetland and an urban forest.

Students of Uniontown Elementary School listened as Gov. Beshear discussed the importance of environmental stewardship and the school's grant to fund a crumb rubber application to their playground. The city of Uniontown received a $38,820 grant from the state Tire Trust Fund. Creative Services photo

EQC Earth Day Awards

To celebrate Earth Day, the Environmental Quality Commission (EQC) recognized several groups and individuals from across Kentucky for their environmental contributions. Recipients are:

- **Energy Wise Program, Kenton County School District** for their innovative efforts in energy efficiency and conservation.
- **Water Pioneers Water Quality Program** for providing watershed education programs to audiences across Kentucky.
- **Sara Johns and Clarence Miller** for their hard work and dedication to educating the public on the importance of conservation and reforestation of our land.
- **The Bluegrass Partnership for a Green Community** for their efforts to increase awareness of the importance of recycling.
- **Dr. Joe Baust** for his efforts to improve environmental education in the commonwealth.
- **Fort Campbell, Ky.,** for its continuing efforts and progress towards environmental sustainability and development.
- **Harlan County Conservation District** for its efforts to help Harlan County recycle old appliances and metals and make the county a much cleaner place.
- **Dara Moran** for recycling, energy efficiency and community cleanup efforts.
- **Judith Petersen** (Public Service Award) for serving the citizens and environment of the commonwealth for more than two decades.
- **Betsy Bennett** (Lifetime Achievement Award) for her tireless efforts as an advocate for the environment.

Additional information on award recipients can be found at www.eqc.ky.gov

Envirothon teams learn about natural resource management, ecology

By Allison Fleck
Division of Water

Richmond's Model Lab High School won top honors at the 2008 Kentucky Envirothon state finals held May 20-21 at the Kentucky Leadership Center in Jabez. Somerset's Southwestern High School A Team took second place and the Oldham County High School Future Farmers of America (FFA) team finished third.

Ten five-member teams arrived at the Envirothon state finals after competing at the regionals in western and eastern Kentucky, which narrowed the field from 31 teams. This year marks the 10th anniversary of the Kentucky Envirothon, which has helped young people in grades nine through 12 develop an understanding of the principles and practices of natural resource management and ecology.

The field portion of the contest raised students' awareness on wildlife, forestry, aquatics and soil issues.

At the wildlife station, students were tested on wildlife management techniques as well as wildlife identification.

During the forestry part of the contest, students were instructed to identify trees, leaves and bark, as well as be able to recognize different types of tree diseases.

Students were tested on identification of insects and waterborne organisms, protection of groundwater and surface water, as well as contributors to water pollution at the aquatics station.

This year's oral competition focused on recreational impacts on the environment. Teams were asked to analyze the recreational opportunities available in their communities and make defensible recommendations for recreation that is sustainable in terms of its environmental, socio-economic impacts and health factors.

Each team was given 15 minutes to prepare a 10-minute presentation that addressed this set of issues. When all the presentations were scored, Model Lab came out on top.

Mark Davis, a geologist with the Division of Conservation, monitored the soils test. He has been involved with Kentucky's Envirothon program during its 10-year history.

"I am always impressed with the knowledge of these young people," he said. "They are bright and eager."

Maxine Rudder, education director with Bluegrass Pride, said Envirothon is excellent training for real-life problem solving.

"Programs like Envirothon are important because these young people represent the generation that will have to find some solutions to the world's environmental problems," said Rudder.

Members of the first three finishing teams received backpacks provided by Kentucky Farm Bureau and a $50 check. Each team also received a framed wildlife print provided by the Kentucky Department of Fish and Wildlife Resources. The teacher sponsors of the three teams received a monetary donation to their programs.

As part of their award, the Model Lab team and two sponsors will travel to the National Canon Envirothon competition at Northern Arizona University in Flagstaff in July.

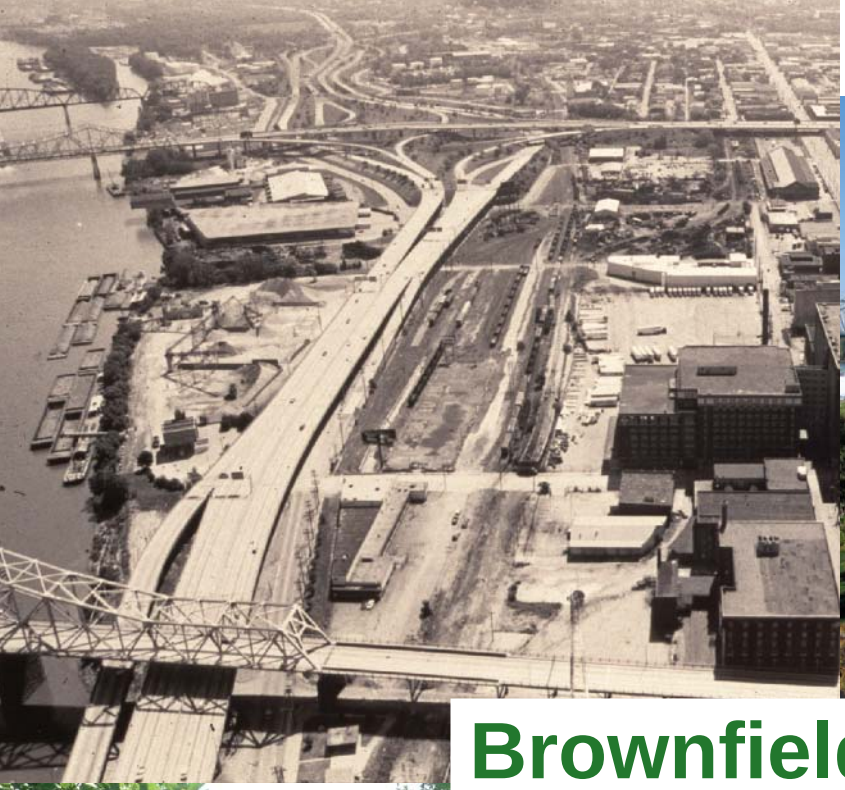
Southwestern High School A Team identify macroinvertebrate at the aquatics site.
Photo provided by the USDA NRCS Kentucky

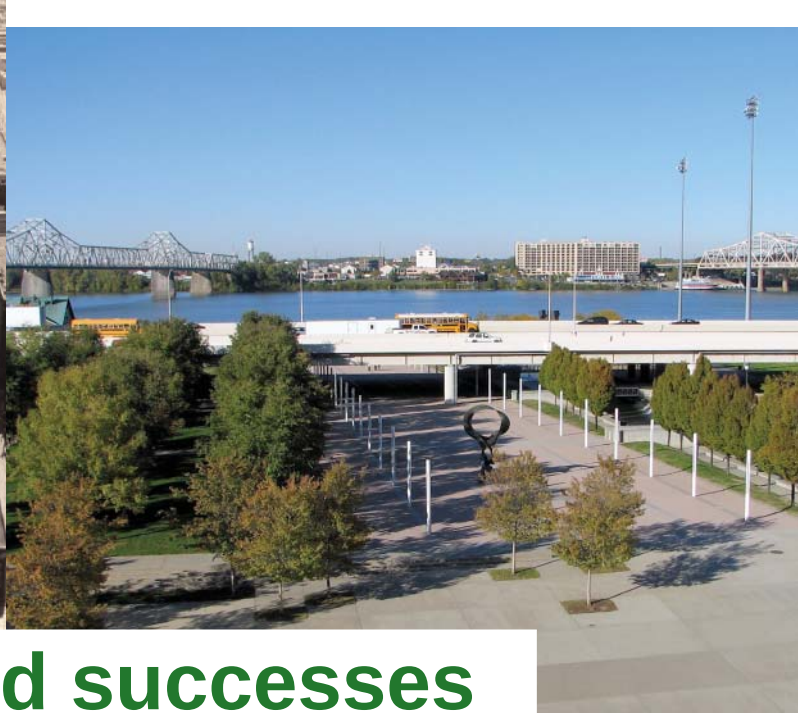
2008 Envirothon sponsors

- Kentucky Association of Conservation Districts
- Kentucky Farm Bureau
- Kentucky Department of Agriculture
- Kentucky Department of Fish and Wildlife Resources
- Kentucky Association of Conservation Districts' Auxiliary
- Kentucky Environmental Education Council
- Natural Resource Conservation Service
- Morehead State University
- Licking Valley Rural Electric Cooperative
- Wal-Mart (Morehead)
- Christian, Caldwell, Elliott, Martin, Johnson, Lewis, Carter, Greenup, Morgan and Rowan county conservation districts.

Other agencies assisting with the program include:

- U.S. Forestry Service
- Kentucky State Nature Preserves Commission
- Kentucky Division of Forestry
- Kentucky Division of Conservation
- Kentucky Division of Water





Brownfield successes

Another form of recycling

By Herb Petitjean
Division of Compliance Assistance

It has become common to recycle so many items in our everyday life – cans, bottles, paper and used motor oil. But what about land? Land recycling is what the Kentucky Brownfield Program strives for—to take brownfields, clean them up and return them to beneficial use. Brownfields are abandoned or underutilized properties that have real or perceived contamination.

Brownfields create problems for communities. Beyond the potential environmental issues of unremediated contamination, the mere presence of vacant properties causes negative effects that are well documented, including increased crime rates and arson. In addition, a 2001 study in Philadelphia found that houses within 150 feet of a vacant or abandoned property experienced a net loss of $7,627 in value.

But beyond using redevelopment to avoid the negatives, redevelopment can create new positives. The boom in downtown Louisville, which created more than 4,900 new jobs since 1986 and $1.3 billion in renovation and new construction, is attributable in part to redevelopment of the riverfront. The area along Interstate 64 that once earned Louisville the citizens band radio nickname of "Junk City" is now a vibrant park whose design is earning international attention and has changed the entire image of downtown.

Kentucky continues to have successful redevelopment projects, varying widely in size. One of the biggest projects involves the former Green River Steel facility in Owensboro, which closed in February 2001. Mammoth Marine Inc. has entered into an option to purchase the property with plans to establish a barge building facility on the 90-acre property, which fronts the Ohio River. Using old structures remaining from the mill, the facility would be the only one in the United States with all activities—material storage and preparation, component fabrication, assembly and painting—under one roof. They anticipate hiring 150 workers.

On the other end of the spectrum is a concrete company in Middlesboro. Its five-person ready-mix operation is built on a portion of an old tannery. The business may be small; but if the property weren't available, the company would have moved out of town.

Continued to Page 16

Scenes from downtown Louisville:
TOP LEFT: ***A 1970s aerial photo along the Ohio River.*** **TOP RIGHT:** ***Festival plaza at Waterfront Park includes the Great Lawn, a water feature and sculpture (Tetra) by Charles O. Perry.*** **LEFT:** ***A couple stroll a walking path through Linear Park.*** **LOWER LEFT:** ***Waterfront Park in the fall.***
Photos provided by Margaret L. Walker, Waterfront Development Corp.

Logjam removal

Some activities may require state permits

By Allison Fleck
Division of Water

Streams clogged by logs and debris are an inevitable result of heavy volume rains that often fall in Kentucky during the summer months. Many landowners then face the task of removing these obstructions to restore stream flow and promote drainage of flooded areas.

"There is no established program in Kentucky at the state, county or city level to take care of this problem unless a state of disaster has been declared, in which case federal aid becomes available," said Art Clay, manager of the Division of Water (DOW) Water Resources Branch. "County governments may provide some assistance when there is impact to a large population, and the Natural Resource and Conservation Service has provided some assistance to farmers in the past. But for the most part, individual landowners are responsible for clearing the obstructed streams on their property."

A logjam is any wood vegetation, with or without other debris, that obstructs a stream channel and creates a backwater condition. Some level of logjam is beneficial as cover for fish and wildlife. Submerged and overhanging logs provide important wildlife habitat. The pool created behind the logjam provides critical aquatic habitat during low-flow conditions. In many cases, the ripples caused by obstructions oxygenate the water to improve water quality.

Excessive jamming, however, can have a negative impact on a stream. A tightly packed stream obstruction can create a barrier to fish migration. It can also cause high-water conditions that erode the stream channel, create stream meanders and prolong flooding conditions. Furthermore, the obstruction to stream flow on one property can result in damages to upstream properties.

Early summer is a good time to conduct debris removal, since stream flow is usually low. Small debris can be removed from the channel without tools or equipment. Larger logs and trees across the channel should be cut into manageable pieces and dragged out of the stream. Heavy equipment often used to remove large logs includes log skidders with cable winches, chain saws, trucks and tractors, and even horse teams.

Alan Grant, water quality certification supervisor at DOW, said particular care should be taken to protect stream banks when heavy equipment is involved.

"Large equipment should never be placed within the stream channel," said Grant. "Any disturbed areas should be seeded immediately to avoid unnecessary erosion."

Grant added that the most beneficial stream maintenance is performed before a logjam occurs.

"A regular program for stream maintenance and obstruction removal may be the best preventive for a large and expensive restoration project later on," he said. "Stream landowners should conduct biannual inspections to identify fallen debris and perform removal work. Standing trees should be left as they are."

Landowners generally are not required by statute to remove logjams from streams on their properties. They may, however, be required to obtain certain water quality permits before undertaking debris removal activities.

"A water quality certification permit is not required from the Division of Water for clearing logjams and other obstructions from a stream that have resulted from flood conditions provided certain precautions are taken," said Tom VanArsdall, manager of the DOW Water Quality Branch. "Tractors or other wheeled vehicles may not enter the stream channel and should be kept away from the bank. Also, traffic to the stream should be limited to a single route to minimize damage to the stream bank and riparian corridor."

A floodplain construction permit from DOW may be required if any debris is deposited in the floodplain, said Clay. All disturbed areas should be restored or replanted with native plant species.

VanArsdall emphasized the importance of personal safety for anyone undertaking logjam removal.

"Never work alone when undertaking logjam removal activities," advised VanArsdall. "Logs and debris can easily shift and trap a worker beneath its weight. It is also advisable to appoint a leader to maintain visual contact with all workers."

For additional information, contact your local city council, fiscal court, soil and water conservation districts and emergency management agency.

Heavy spring rains in Powell County resulted in stream erosion and downed trees in this waterway. Photo by the Division of Water

Right in their own backyard

By Diana Olszowy
Division of Forestry

Most folks would be delighted to find one state or national champion big tree growing on their property, but former Gov. Brereton and Libby Jones were lucky enough to find two. The Joneses now stake claim to the new state champion bitternut hickory and state and national champion bur oak. Their bur oak beat the reigning 30-year national champ located in Bourbon County.

The bitternut hickory measures nearly 3 foot in diameter and towers 110 feet. The bur oak measures nearly 8 foot in diameter and reaches 104 feet in height.

The Joneses were presented with Kentucky big tree certificates at the state Arbor Day celebration on April 4. The Joneses are thrilled with owning their own pieces of history – right in their own backyard.

To learn more about Kentucky's big tree program, visit http://www.forestry.ky.gov/programs/Do+You+Have+a+Champion+Tree.htm or call 800-866-0555 for additional information.

LEFT: Libby and Brereton Jones receive big tree certificates during the Arbor Day celebration in April.
RIGHT: This bitternut hickory growing on the Jones' farm towers 110 feet, making it the state champion tree. Photos provided by the Division of Forestry

Training programs and workshops make a difference

By Mary Jo Harrod
Division of Compliance Assistance

Automotive/Collision Repair

The Kentucky Department for Environmental Protection's Division of Compliance Assistance (DCA), along with the Kentucky Pollution Prevention Center and Design for the Environment, recently offered two workshops on Environmental Basics for Automotive/Collision Repair geared toward shop owners, automotive painters, repair specialists, paint suppliers and instructors.

On Jan. 9, 2008, the U.S. Environmental Protection Agency released new regulations affecting all automotive/collision repair shops engaged in painting activities. The National Emission Standard for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operation area source rule states that shops must comply with requirements concerning paint booth design and operation, training of spray technicians, gun use and operation, as well as recordkeeping and reporting requirements.

Since these regulations will have far-reaching impacts regarding compliance responsibilities, the workshops were offered to help educate this industry and answer questions in an effort to reduce the regulations' impact on business and improve working environments. Held in Lexington and Bowling Green, the workshops covered best management practices, regulatory requirements and pollution prevention opportunities—information that would help reduce costs, increase operating efficiency and improve compliance rates.

Kenya Stump, coordinator for the Environmental Compliance Assistance Program, said there were 170 automotive/collision repair workshops participants, and many of them found the training to be "very informative and a step in the right direction."

Pharmaceutical Waste

Another workshop offered in April was geared toward pharmacists, veterinarians, staff in hospices and hospitals, wastewater treatment plant operators and others interested in learning more about pharmaceutical waste and the development of take-back programs. The one-day workshops, held in Louisville and Lexington, were designed to raise awareness and educate the health care community and others on the proper management of pharmaceutical waste as hazardous waste.

Workshop topics included the handling of hazardous and nonhazardous pharmaceuticals, such as labeling, storing, packing and shipping; minimizing pharmaceutical waste generation; developing and implementing a pharmaceutical waste management system and using take-back programs.

By the end of the workshops, 91 percent of the participants reported having a better understanding of their environmental responsibilities and the environmental assistance resources available to them.

Additional workshops and training in other areas are being planned by DCA and will be announced as the information is available.

Water treatment plants receive state recognition

By Allison Fleck
Division of Water

Thirty-two water treatment plants in Kentucky have received awards from the former Environmental and Public Protection Cabinet in recognition of their demonstrated success in producing drinking water that consistently meets or exceeds state water quality standards.

The 32 were among 156 public and private water treatment plants in the state that participated in the U.S. Environmental Protection Agency's Area-Wide Optimization Program (AWOP), which challenges plants to reduce turbidity levels below those required by state and federal regulations. Turbidity, or cloudiness of water, can be caused by sand and dirt, as well as bacteria and viruses. Particle removal is critical for producing water that is free from dirt and microbes that can cause water-borne diseases.

Two water systems—Greensburg Water Works and Rattlesnake Ridge Water District in Grayson—received Kentucky's first "AWOP Champion" awards for meeting the optimized water quality goals for particle removal 100 percent of the time for three consecutive years (2004-2007).

Benham Water Plant and Stanford Water Works also received special recognition for achieving the optimized water quality goals 100 percent of the time during 2007.

Water systems recognized for meeting those goals 95 percent during 2007 include Barbourville Water and Sewer, Beech Fork Water Commission, Burnside Water Co., Cave Run Regional Water Commission, Central City Water and Sewer, Columbia Utilities Commission, Danville City Water Works, Glasgow Water Co./Barren River Water Treatment Plant, Green River Valley Water District, Greenup Water System, Hardin County Water District No. 1, Hardin County Water District No. 2, Jackson Municipal Water Works, Kentucky-American Water Co./Richmond Road Station and Lawrenceburg Water and Sewer Department.

Others were Logan Todd Regional Water Commission, London Utilities Commission, McCreary County Water District/Cumberland River Water Treatment Plant, Morehead Utility Plant Board, Northern Kentucky Water District/ Fort Thomas Water Treatment Plant, Northpoint Training Center, Paducah Water Works, Pineville Water System, Richmond Utilities, Southern Water and Sewer District, Versailles Water System, West Liberty Water Co. and Wilmore Water Works.

Lester Bowling (left), superintendent of the Rattlesnake Ridge Water District, received an AWOP Champion Award from Hank List (center), deputy secretary of the former Environmental and Public Protection Cabinet, during the 51st Kentucky Water and Wastewater Operators Association Conference. Mike Maggard (right), with Sisler and Maggard Engineering, was the design engineer for the plant. Cabinet photo

Sandy Gruzesky, director of the Kentucky Division of Water (DOW), praised the water plants for their achievements.

"AWOP is one of the most successful programs the division has for facilitating improved operations at public and private water systems," said Gruzesky. "It's gratifying to see how hard these systems have worked to earn their awards."

Donna Marlin, manager of the DOW Drinking Water Branch, challenged water plant staffs to keep up the good work.

"Together, these systems serve more than a million Kentuckians who can be assured that their water treatment systems are working hard to produce safe drinking water from Kentucky's lakes, rivers and reservoirs," said Marlin. "I expect to present many more awards next year as water systems continue to make technical, managerial and financial improvements in the business of producing clean, safe water for the citizens of the commonwealth."

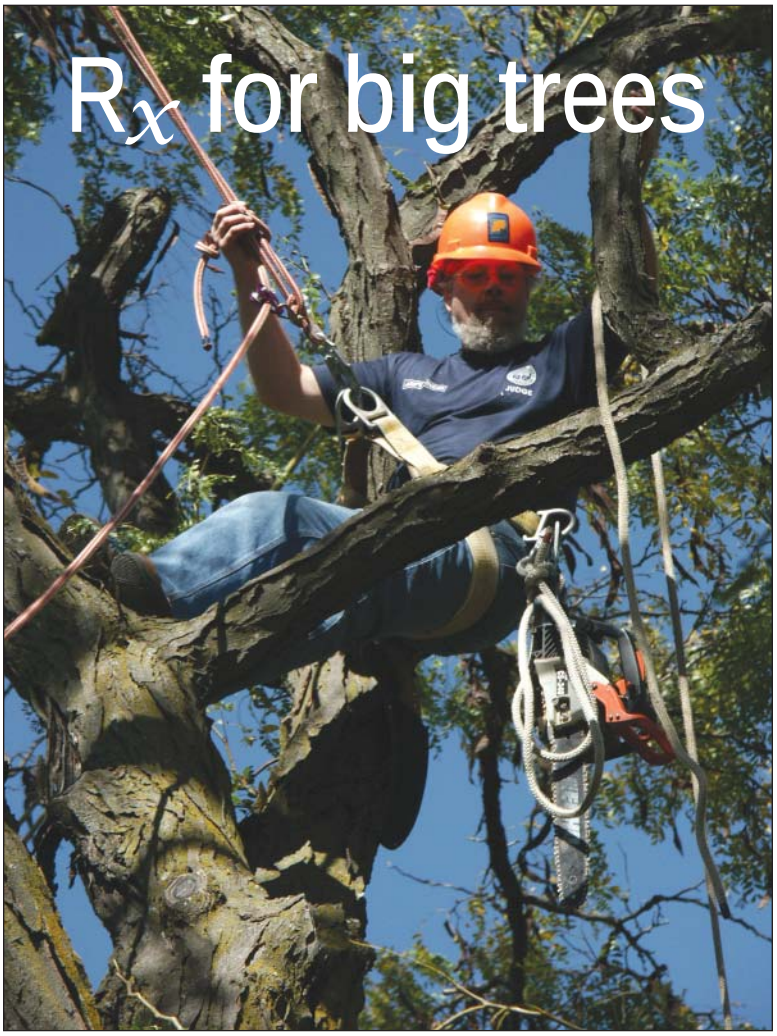
Brownfield successes *Continued from Page 13*

Maysville Mayor David Cartmell is fond of saying, "Maysville was built on whiskey and tobacco, but it was milk that did us in." The town had been home to a condensed milk cannery from back in the days when lead solder was used for sealing the cans. The fumes from the furnace that heated the solder distributed lead across the cannery property. This contamination has been addressed, and the facility is now producing specialized industrial ovens and employs 30 people.

In Louisville, an "intergenerational" residential development is being constructed on one brownfield site, and a supermarket is being built on another. The supermarket developer indicated that recent changes in Kentucky's environmental liability law made him more comfortable with proceeding with the project.

Another recent change that may encourage developers to consider brownfields is brownfield tariffs. The Public Service Commission recently granted approval for E.ON U.S., which includes Kentucky Utilities and Louisville Gas and Electric, to offer discounted electric rates for the first few years for industries that locate on brownfields. They join Duke Energy, which offers a similar incentive. This is another form of recycling—recycling the electrical infrastructure that is already in place to serve these abandoned properties.

R_x for big trees



A prescription for proper maintenance and care will ensure that trees have a good chance at growing to be quiet giants.

By Diana Olszowy
Division of Forestry

Every community has a neighborhood, a street or maybe just a city block that is attractive and a desired part of town. Why? Often because of its large shade trees.

In some areas, large oaks, ashes and maples provide a canopy for older neighborhoods. Although these large magnificent trees may look invincible, they are mortal and at some point in time will die or become a public safety hazard. Each community faces the painful, and often controversial, decision of losing mature trees. So what can be done?

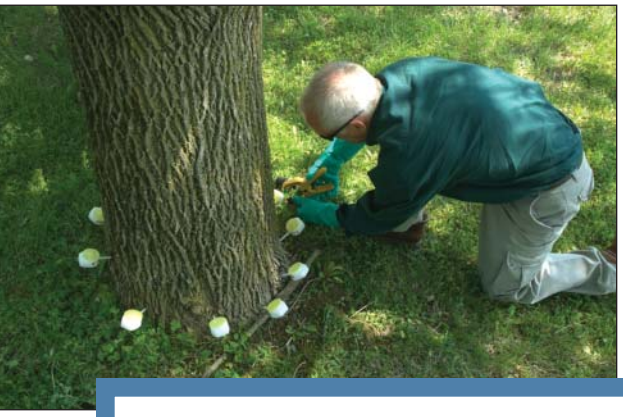
Similar to our own health, the life of mature trees and their benefits is extended through improved long-term health care, reduction of outside stress and avoiding unnecessary changes through good common sense. Long-term health care for most mature trees should involve a prescription of pruning that is timely and concentrates growth on the best branches. Like a forest or garden, thinning can actually stimulate even the oldest trees to improve overall growth.

Only in rare circumstances do mature trees die quickly over a period of several weeks, such as with Dutch elm disease or oak wilt. Trees generally decline and gradually die back due to outside stresses. In native woodlands, the primary stress factors are insects and extremes of moisture and temperature. However, in an urban setting drought is one of the most prominent stresses for trees due to severe soil compaction. Tree stress is an invitation to opportunistic secondary insects and disease that weaken and eventually shorten the tree's lifespan.

To help alleviate stress, trees should be placed on a schedule of deep and infrequent watering during drought, and the aeration of tight, compacted soils can be done easily by a homeowner, park personnel or arborist. Trees prefer, on average, 1 inch of precipitation per week to keep them vigorous. In addition, a 2-inch to 4-inch layer of mulch can provide trees with a stable root environment that is cooler and contains more moisture then the surrounding weeds and turf.

Defense is the best medicine against damage that can harm mature trees. Protecting the root area beyond the tree's drip line during construction work and tunneling underground utilities rather than trenching can minimize stress related to human impact. Fertilization is another important aspect of mature tree health care. A soil test can best determine the correct fertilizer mixture for your tree. Consult an arborist for advice on application and the best time of the year and blend for each of your trees.

Large mature trees are community assets that have long been ignored. With proper care, these stately treasures will be around for generations to enjoy.



ABOVE: ***An arborist prunes dead wood out of a large honey locust.*** Photo provided by the Kansas Forest Service

LEFT: ***An arborist injects an ash with pesticide to kill emerald ash borer.*** Photo by David Cappaert, Michigan State University

How to prolong the life of your tree

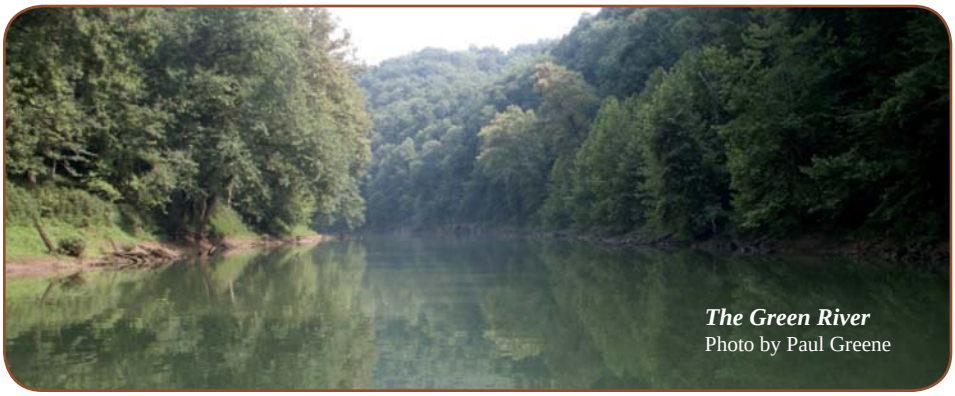
- Prune regularly to stimulate growth.
- Reduce soil compaction in urban areas.
- Water deeply, but infrequently, during drought.
- Fertilize correctly and during the proper time of the year.
- Protect from damage caused by construction or demolition work.

Report on water quality assesses Kentucky streams

By Randy Payne
Division of Water

The Division of Water (DOW) has released its 2008 Integrated Report to Congress on Water Quality in Kentucky, which is required by the Clean Water Act. The Clean Water Act seeks to make the nation's waters safe for swimming and fishing and for supporting healthy aquatic life. The report assesses the extent to which the state's waters have attained those goals.

The 2008 report fulfills requirements of sections 303(d), 305(b) and 314 of the act, under which states must provide reports every two years that assess the quality of all waters and a list of those that are impaired or threatened. State water quality regulations designate uses for rivers, streams and lakes. Assessments for the report examine whether streams support those designated uses, including aquatic life, swimming, fish consumption and domestic water supply.



The Green River
Photo by Paul Greene

The report shows that the major causes of waters not fully supporting designated uses were pathogens, which affected swimming use support, and siltation and habitat alterations, which affected aquatic life use support. The major sources of these problems, or pollutants, were runoff from agricultural activities, habitat modification and resource extraction.

The report is based primarily on monitoring performed between April 2005 and March 2007 in the Four Rivers-Upper Cumberland River and the Green-Tradewater rivers basin management units (BMUs). Monitoring and assessment were performed on 563 stream segments representing 2,506 stream miles in the Four Rivers-Upper Cumberland BMU and 437 stream segments totaling 2,548 stream miles in the Green-Tradewater BMU. The report also incorporates data and results from monitoring that occurred in other areas, thus providing a statewide update of monitoring results.

The Four Rivers region includes the far western portion of Kentucky, with portions of the Lower Cumberland River basin, Lower Tennessee River basin and direct tributaries to the Ohio and Mississippi rivers.

The Upper Cumberland river basin includes the headwaters of the Cumberland River down to the Kentucky-Tennessee line.

The Green River and Tradewater river basins include all those areas that drain into the two rivers.

The 2008 report integrates two associated documents. Volume 1 reports the 305(b) assessment methods, processes, overview of the state's water resources, monitoring programs, statistical findings, georeferencing of monitored and assessed results, and a comprehensive listing of all waters or segments assessed, along with results, causes and probable sources.

Volume 2, the 303(d) list, names waters and segments that were not fully supporting one or more designated uses. For each body of water, the state must develop a daily maximum allowance for each identified pollutant that will allow the stream to meet water quality standards.

In 1997, the former Environmental and Public Protection Cabinet initiated a five-year rotating watershed management approach. Watersheds monitored and assessed include the Kentucky River Basin (2002-2004), the Salt-Licking rivers basin (2003-2005), the Upper Cumberland River and Four Rivers (Lower Cumberland, Mississippi, Ohio and Tennessee rivers) basin (2004-2006), the Green-Tradewater rivers basin (2005-2007) and the Big Sandy-Little Sandy rivers and Tygarts Creek basin (2006-2008).

To view the Integrated Report, visit http://www.water.ky.gov/sw/swmonitor/305b/

Are there drugs in your drinking water?

Continued from Page 5

- Remove and destroy all identifying personal information (prescription label) from the medication container.
- Check for approved state and local collection programs or with area hazardous waste facilities. In certain states, you may be able to take your unused medications to your community pharmacy.

By addressing what we put into the wastewater to be treated and discharged, we address the introduction of these contaminants into the environment. The fact remains that the less contaminants we introduce to our source water, the less contaminants we are forced to remove. As a society we must begin to view environmental impacts from the whole picture, not just the piece that affects us. In order to address these emerging contaminants, such as pharmaceuticals, we must begin to develop joint plans of regulation that include drinking water, wastewater, industry and the general public. Environmental stewardship is everyone's responsibility.

This article was compiled from literature published by the U.S. EPA, the U.S. Geological Survey, the American Water Works Association and the U.S. Fish & Wildlife Service.

Old Manchester Landfill goes green, Kentucky Pride Fund project wins award

By Eva Smith-Carroll
Division of Waste Management

Environmental remediation and closure of the old Manchester Landfill in Clay County includes a gravity driven, self-sustaining "green" leachate treatment system that won an Engineering Excellence Award from the American Council of Engineering Companies (ACEC) of Kentucky.

Leachate is water that collects contaminants as it trickles through a landfill. This "green" system, which can be replicated at other closed landfills, saved about $800,000 by eliminating the need for costly mechanical systems to treat surface water.

The award for the innovative design went to project lead Fuller, Mossbarger, Scott & May Engineers Inc., Lexington, and the Department for Environmental Protection's Division of Waste Management, the agency that administers the Kentucky Pride Fund.

ABOVE: ***A constructed wetland at the Old Manchester Landfill improves water quality at the site.*** Photo by Fuller, Mossbarger, Scott & May Engineers Inc.

LEFT: ***Danny Anderson, supervisor of the Closure Section in the Division of Waste Management's Solid Waste Branch, represented the division at the American Council of Engineering Companies of Kentucky award ceremony.*** Division of Waste Management photo

Metals-laden leachate is oxidized as it travels down the landfill face and under rock armor—rock used to slow erosion—before it reaches the constructed wetland. The Softstem Bulrush wetland vegetation further improves water quality and allows new ecosystems to develop and thrive.

The design and construction addressed several potential problems including the landfill's isolated setting in a steep hollow, highwalls left from mining, slope erosion, slope stability concerns, failure of the existing landfill cap and other physical site constraints including jurisdictional streams, protected natural wetlands and a natural gas pipeline.

An additional problem was the lack of suitable soil borrow material for structural fill and final cover needs. The existing, left-over mine spoil material was too wet and lacked adequate engineering properties for these uses. However, by mixing lime with the mine spoil, the lime reacted with the wet spoil material which promoted drying of the spoil and transformed it into a material with excellent engineering properties. This provided cost savings by eliminating the need to purchase and transport soil from an off-site borrow source.

Kenvirons Inc., of Frankfort, provided resources in the initial phases of the project including research, environmental sampling and site reconnaissance, and R.B. Jergens Contractors Inc., Vandalia, Ohio, was responsible for construction.

The $5 million project is one of several old closed landfills receiving upgrades with money from the Kentucky Pride Fund, which is underwritten by a $1.75 per ton fee on municipal solid waste disposed in Kentucky's contained landfills.

Forestry employee to receive award for dedication to environmental education

Belinda Wilkins-Smith was recently selected by the U.S. Fish and Wildlife Service to receive the Conservation Award at the Regional Director's Awards ceremony in Atlanta, Georgia. Wilkins-Smith, a forest ranger technician in Green County, is being honored for her contributions to the Biologist-in-Training Program (BiT) development team.

Wilkins-Smith worked on the team with other environmental educators across Kentucky to promote national fish hatcheries as unique outdoor classrooms. Wolf Creek National Fish Hatchery serves as the first hatchery nationwide to implement the experiential program. The program is aligned with national education standards and offers children the opportunity to learn about the environment while having meaningful interactions with nature.

"This program is an excellent way to deliver the stewardship message—that we must manage our natural resources properly and make every effort to protect our environment," said Wilkins-Smith.

The program is currently geared toward elementary students, and the hatchery offers the perfect setting for children to learn about aquatic ecosystems and the importance of forests in protecting water quality. Wilkins-Smith will continue to assist the fisheries outreach staff in helping design additional programs for middle school and high school groups.

"Educating children about our natural resources is the most enjoyable and important part of my job, and I appreciate the support from my co-workers who make it possible for me to continue to work with the BiT team," she said.

Wilkins-Smith has been with the Division of Forestry for 10 years. She fights forest fires, inspects timber harvest operations, conducts forestry education programs and is certified as a Kentucky environmental educator.

Brownfield staff part of team that receives EPA award

Herb Petitjean and Amanda LeFevre, from the Brownfield Program in the Division of Compliance Assistance (DCA), were presented the National Notable Achievement Award, which recognizes exemplary accomplishments on the front lines of the Environmental Protection Agency's waste management and emergency response programs.

Petitjean and LeFevre were part of the planning team that organized the Sustainable Redevelopment in the Ohio River Valley Conference in Louisville last October. The conference has drawn national praise, and the organizers received recognition for their hard work during a ceremony in Arlington, Va., in May.

Petitjean has worked for DCA since 2005, but has also worked in the brownfield arena for 10 years. He coordinates administrative activities for the program. LeFevre joined DCA in 2006 and coordinates the outreach and education activities for the program.

Olszowy receives award for editorial contributions

Diana Olszowy, a Kentucky Division of Forestry employee, recently received the 2007 Gold Award for Excellence by the Southern Regional Extension Forestry Office. Olszowy is an editor for *Kentucky Woodlands Magazine*. Olszowy, along with her co-editor Jeff Stringer, associate editor Billy Thomas and assistant editor Renee Williams, received the award for exceptional contributions in extension publication.

Kentucky Woodlands Magazine is a joint effort between the Division of Forestry and the University of Kentucky's Cooperative Extension Service. Olszowy and her colleagues collaborate on the quarterly magazine to promote stewardship and sustainable management of Kentucky's nonindustrial private forests.

Kentucky Woodlands Magazine is distributed to more than 10,500 woodland owners, forest industry workers and resource specialists and is funded in part by federal funds. It can be viewed online at http://www.ca.uky.edu/KYWoodlands-magazine/about.php.

"The intent of the magazine is to provide information vital to sustaining the health and productivity of our forests so landowners can make the best possible decisions in their management," said Olszowy.

The magazine includes articles on forest health and management, landowner outreach opportunities and issues, wildlife habitat enhancement and forest utilization. Olszowy has written articles about forest stewardship, tree care, the state nurseries and wildfire prevention. Her articles about Kentucky's Big Tree Program appear as a series in the magazine.

Olszowy has been an employee with the Division of Forestry since 1989 and has worked as a service forester and as an urban and community forestry program coordinator. She is currently the branch manager for the stewardship and education branch.

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