



Land Air & Water

Kentucky Environmental and Public Protection Cabinet

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Spring 2008

Land Air & Water

since 1988

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Do your part for cleaner air

By Elizabeth Robb Schmitz
Division for Air Quality

Air Quality Awareness Week is April 28–May 2, 2008.

This is the perfect opportunity for Americans to learn more about air quality and to do their part in making the air they breathe cleaner.

The Kentucky Division for Air Quality (DAQ), the U.S. Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service urge Americans to "Be Air Aware" during Air Quality Awareness Week. Visit the Kentucky DAQ's Web site for daily updates on air quality at <http://air.ky.gov>. Here are some highlights of Air Quality Awareness Week:

Monday – What is air pollution? Explore the two most prevalent pollutants in Kentucky and in the nation: ozone and particle pollution.

Tuesday – What causes poor air quality? Poor air quality is generally caused by a number of factors. Sources of pollution can vary from community to community, and some of Kentucky's air pollution sources are found throughout the state. Some examples are the burning of fossil fuels for energy, transportation, construction and agriculture. Other factors, such as prevailing weather conditions, can have an effect on local air quality.

Wednesday – How can I keep my lungs and heart safe? The Air Quality Index is a tool developed by the EPA that helps children and adults know, at a glance, what level of physical activity is safe, based on current air quality levels and subsequent health affects.

Thursday – Where can Kentuckians find local and current air quality conditions? Explore air quality forecasts, what they mean and why they are not available in all areas.

Friday – What can Kentuckians do to help champion clean air? Many everyday actions and habits can make the difference between clean and dirty air.

If you are interested in conducting an event to raise awareness in your community or school, contact the Division for Air Quality's environmental education specialist at 800-928-0047.

For additional information, visit <http://www.epa.gov/airnow/airaware/airaware.html>

Students at Oldham County Middle School learn about the benefits of hybrid vehicle technology for air quality.

Photo by Elizabeth Robb Schmitz



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

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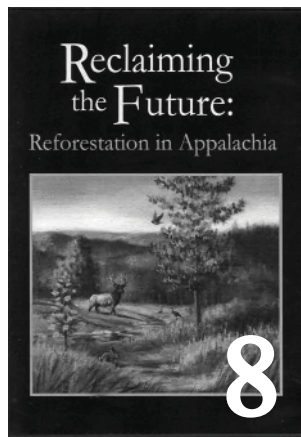
Features

- 1** **Mine Safety**—In 2007, Kentucky set a record for mine safety. A new drug testing program and heightened awareness of mine safety habits attributed to the low number of deaths.

- 8** **Reducing the Impacts of Coal Mining**—DVD, teachers' guide available to teach students about reforestation techniques on Kentucky's coal fields.

- 9-10** **Yard Care**—The Environmental and Public Protection Cabinet offers eco-friendly tips for maintaining your lawn and important information about selecting the right plant species for your landscape.

- 14** **KY EXCEL**—Members get creative as they perform voluntary projects that clean up the environment and protect the state's natural resources.





Our Cover

This redbud tree (*Cercis canadensis*) was photographed in the Daniel Boone National Forest by Merle Wasson of Paris, Kentucky.

Its unusual blooming pattern may be caused by weather-related stress or damage.

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Contents

Do your part for cleaner air	Inside cover
Marrowbone Creek State Forest	2
List, Scott named to key positions in EPPC.....	3
Utilities helping utilities.....	4
Fighting bush honeysuckle the Ben Franklin way	5
Carrollton regional wastewater plant service spans four counties, draws new industry	6
Networking group will promote recycling.....	7
Inspector training brings 'dividends' in the field	11
New year, new tools for brownfield redevelopment.....	11
Division of Forestry offers low-cost seedlings at two nurseries	12
Hazy days of summer.....	13
ECAP program aids regulated entities	17
Oil and gas locator will prevent accidents, environmental damage	18
EPA taps two Kentucky water systems for national awards	19
Awards.....	20
Orientation presents dangers, concerns about meth.....	Back cover

Kentucky sets record for mine safety



Mines win safety awards for 2007

By Linda Potter
Department for Natural Resources

As 2007 drew to a close, the mood at the Department for Natural Resources (DNR) vacillated between relief and apprehension. Kentucky coal mines were well on their way to the safest year in Kentucky's mining history. Thankfully, as 2008 dawned, the record stood. The past year was significant in mine safety for two reasons. For the first time, there were no mining fatalities in an underground mine. Secondly, the two surface mining fatalities that occurred in 2007 are the lowest number of fatalities on record.

With 526 coal mines, Kentucky leads the nation in the number of coal mines and is the nation's third-largest producer of coal. For more than a century, coal has fueled America's economy, often at the expense of Kentucky miners and their families. Records dating back to 1890 indicate that the deadliest decade in mining was in the 1920s when 1,614 mining fatalities were recorded. Since that time, the number of fatalities has steadily decreased with each decade—242 fatalities in the 1980s, 117 fatalities in the 1990s and 61

TOP: Miners transport themselves inside the Cave Spur LLC mine #1 in Harlan County in the Harlan District. The mining company was recognized for its safety record in 2007.

Photo provided by the OMSL Harlan District Office

fatalities since 2000.

The Kentucky General Assembly passed major mine safety legislation in 2006 and 2007, and launched the first drug testing program for miners in the nation. Since the new drug testing program went into effect in July 2006, 474 certified miners have been suspended. While DNR has no hard data to prove that the drug testing program was responsible for the decrease in fatalities, the ability to remove impaired individuals from mining has had a significant impact. Other factors affecting the lower fatality rate are a bit more subtle. The mining community, both miners and operators, are more mindful of safe work habits. Mine safety analysts from the Office of Mine Safety and Licensing interact closely with them to point out unsafe acts with recommendations for safer ways to work. In addition, mine inspectors conducted a record number of inspections in

"This is a positive indication that the new mine safety laws, including Kentucky's new drug testing program, are having the desired effect. Of equal importance is the focus that our coal industry and Kentucky miners have placed on safety and the heightened sense of awareness of every miner to work safely every day,"

Susan Bush, former commissioner
Department for
Natural Resources



2007, writing 7,991 noncompliance and closure orders.

"This is a positive indication that the new mine safety laws, including Kentucky's new drug testing program, are having the desired effect. Of equal importance is the focus that our coal industry and Kentucky miners have placed on safety and the heightened sense of awareness of every miner to work safely every day," said former DNR Commissioner Susan Bush. She added, "While this historic decrease in fatalities is very encouraging, we cannot let down our guard or lessen our efforts to ensure that every miner returns home safely every day. The goal remains zero fatalities."

ABOVE: Miners work in the underground mine of Enterprise Mining Co. LLC mine #5 in Letcher County in the Hazard District. The mining company received an award for being one of the safest mines in Kentucky in 2007.

Photo provided by the OMSL Hazard District Office



ABOVE LEFT: *Marrowbone Creek, located in the new state forest, provides aquatic habitat for a variety of animal species.*

ABOVE: *The state forest has a long history of stewardship as seen with this 35-year-old white pine plantation.* Photos provided by the Division of Forestry

Marrowbone Creek State Forest

A wealth of resources

By Lynn Brammer
Division of Forestry

Marrowbone Creek State Forest recently became Kentucky's seventh state forest. The newly acquired property is located on the Metcalfe-Cumberland county line and is centrally located to Mammoth Cave National Park, as well as other natural areas including Green River Lake, Lake Cumberland, Dale Hollow Lake and Barren River Lake state parks. Visitors to the forest will find a variety of habitats that support diverse plant and animal communities.

The 1,125-acre tract is located in a transitional area and has a diversity of forest types. Tree species that are typical of mixed-mesophytic forests, including oak, hickory, elm, walnut, tulip poplar, white pine and hemlock, are common to the area. The variety of habitats—from grasslands to early-successional woods to mature forests—provide forage and nesting sites for many bird species, including

wild turkey, ruffed grouse, red-cockaded woodpeckers and broad-winged hawks. Neotropical songbirds likewise benefit from the different successional stages of the forest and are prevalent in the area.

The property contains more than 9 miles of tributaries in the Green River and Cumberland River watersheds. Riparian areas, the buffer zones along these watersheds, are critical to the survival of many species located in the area. The Green River Watershed is the fourth most biologically diverse aquatic ecosystem in the U.S. and is home to 151 species of fish and 71 species of mussels. The presence of two federally endangered bats—the Indiana bat and the Gray bat—add further significance to this property and the need for conservation and proper management.

The quality of resources on the property has a great deal to do with a long history of forest stewardship and wildlife

management. The land has been an active stewardship forest since the 1970s and was the Tree Farm of the Year in 2003. The previous landowner, Judge Daryl Coffey, worked extensively with the Kentucky Division of Forestry, the Kentucky Department of Fish and Wildlife Resources and the Natural Resource Conservation Service for more than 30 years.

The Division of Forestry manages state forests and stewardship properties, like Marrowbone Creek, using the ecosystem management approach. This approach ensures the health and diversity of forest resources while allowing sustainable use by humans. Various conservation techniques include planting trees and wildlife food plots, providing wildlife habitat with noninvasive plant species and maintaining healthy riparian zones. The division also

Continued on Page 8

List, Scott named to key positions in EPPC

A new administration often brings with it new policies, new priorities and new faces. However, the Environmental and Public Protection Cabinet is fortunate to have two familiar faces on board to take the reigns of the important roles of deputy secretary of the cabinet and commissioner of the Department of Environmental Protection.

Deputy Secretary

Henry Clay “Hank” List was named deputy secretary in January for the second time in his state government career. He served first as deputy secretary, then as secretary in the former Natural Resources and Environmental Protection Cabinet in 2001-2003.

List served from 1978-1984 as the state representative for the 79th District in Fayette County. In 2006-2007, he was vice president of government relations for the Kentucky Association of Manufacturers. He previously held various legislative and public affairs positions for Kentucky Utilities, Louisville Gas & Electric and East Kentucky Power Cooperative.



“I am excited to be back in Frankfort to serve in Governor Beshear’s administration,” said List.

“I see a wonderful opportunity to finding innovative ways to stimulate Kentucky’s economic growth and at the same time protect our environment.”

List’s wide range of experience

has led to environmental improvements for the commonwealth.

“Over the years, I have worked to deal with the regulation of hazardous waste, nuclear waste and in the development of Kentucky’s brownfields redevelopment program,” he said.

Sanitary and stormwater infrastructure issues, replacement of old power plants with new technology generation and emission control processes, and continued improvements in water quality and quantity in the major water basins are among the challenges that need to be addressed, said List.

“Over the years, I have worked to deal with the regulation of hazardous waste, nuclear waste and in the development of Kentucky’s brownfields redevelopment program.”

Hank List

“It has been a real blessing, and I have enjoyed it immensely. When I first started working for the state, I never thought I would be a supervisor, let alone commissioner. I am very grateful for the opportunity.”

R. Bruce Scott

Commissioner

R. Bruce Scott, a familiar face in the EPPC since 1983, was named commissioner for the Department for Environmental Protection (DEP).

He grew up on a Trimble County farm and graduated from the University of Kentucky with a degree in chemical engineering. The summers of his college years were spent taking water samples at a Madison, Indiana power plant, which gave him a different perspective on the environment. After graduation, Scott began his career with the state of Kentucky in the Division of Water, where he stayed for 21 years before becoming director of the Division of Waste Management.

Scott says of his career in state government, “It has been a real blessing, and I have enjoyed it immensely. When I first started working for the state, I never thought I would be a supervisor, let alone commissioner. I am very grateful for the opportunity.”

Some of his accomplishments include ensuring the efficiency and responsiveness of his agency and keeping workloads current, upgrading the personnel classification system, revising and updating regulations, and success in being a good steward of the commonwealth’s money.

“The biggest issue the department faces today is the budget,” says Scott, who has a fairly broad view of DEP and what it does. “We will have to be very creative with our new budget so as to ensure that the department continues to provide the level of services for the commonwealth that is expected of us.”

TOP: Hank List, deputy secretary, Environmental and Public Protection Cabinet. Photo provided by Creative Services

ABOVE: R. Bruce Scott, commissioner, Department for Environmental Protection. Photo provided by DEP

Utilities helping utilities

KyWarn links water agencies for emergency aid

By Allison Fleck
Division of Water

Firefighters do it. Electric companies do it. Now Kentucky's water utilities are doing it. They are banding together for mutual aid.

KyWARN, the Kentucky Water and Wastewater Agency Response Network, began in July 2006 to provide drinking water and wastewater utilities with emergency planning, response and recovery information before, during and after an emergency.

The need for a water utilities mutual aid program was made vividly apparent following hurricanes Katrina and Rita in 2005, when federal, state and local governments were overwhelmed by the catastrophe. At such times, communication and infrastructure are likely to be in disarray.

WARN fills the need for personnel and resources before the arrival of government aid. The objective is to provide rapid, short-term deployment of emergency services to restore the critical operations of the affected water or wastewater utility.

Not surprisingly, California and Florida were among the first states to establish WARN networks. Three natural disasters in California in the early 1990s convinced state and local officials they needed an organized program of mutual aid. Soon after CalWARN was created, it was tested by an earthquake, El Nino storms and Sonora fires. In each situation, personnel and equipment were deployed among utilities at an unprecedented level.

Currently, 20 states have established a WARN program and 30 others are in the process of doing so.

What makes the WARN program different from other mutual aid programs is that (1) both public and private utilities are involved and serve as signatory members, (2) there is a focus on training and education, (3) activation of a request does not require a formal public declaration of an emergency and (4) it remains a collaborative effort managed by utilities, not layers of government.

"A lot of people are afraid of things that are attached to the government," said Dwight Williams of Bowling Green Municipal Utilities, who chairs the KyWARN steering committee. "This is just an agreement that allows us to help each other that also establishes a mechanism for reimbursement. There is absolutely no cost involved in becoming a member, and no utility is ever obligated to respond."

The agreement defines the network's administration, procedures, responsibilities, cost reimbursement, dispute resolution, insurance and other related issues. Utilities that sign the agreement have legal assurance that they will be reimbursed for the assistance they provide other utilities.

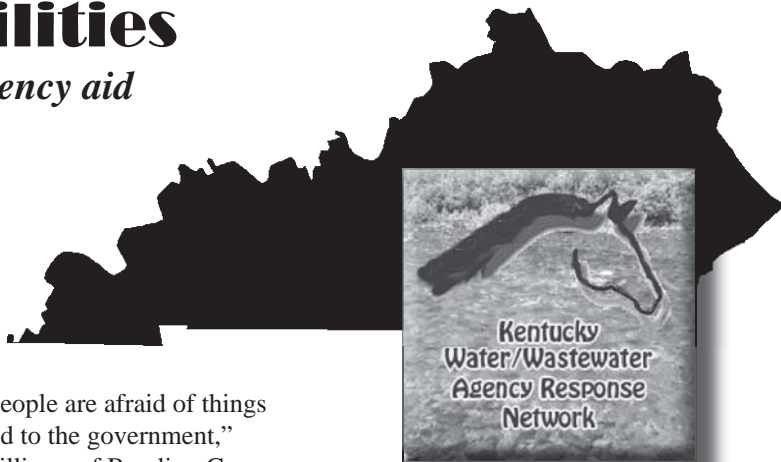
The core of the KyWarn program is the emergency equipment database, which is maintained on the KyWARN Web site. Members can use the secure database to locate equipment such as pumps, generators, chlorinators and evacuators. They can also identify the locations and availability of trained personnel.

While members are not required to file a mutual aid agreement with KyWARN, it is to their advantage to do so, said Williams.

"Like the bucket brigade for fire fighting, Kentucky's neighboring utilities have a long history of helping one another," said Williams. "The KyWARN aid network actually formalizes the practice of mutual aid and assistance."

Williams said Kentucky "did it right" when establishing its program two years ago.

"The steering committee was composed of seven people representing both public and private utilities of all sizes that covered the whole state," he said. That worked real well because of the diversity.



"This is not a matter of the big utilities telling the little utilities what to do."

Julie Roney, of the Kentucky Division of Water, said situations like drought, flooding, tornadoes and ice storms are the problems Kentucky water utilities will deal with most often.

"There are dozens of small utility companies in the state with limited budgets, equipment and spare parts," she said. "You may have a utility that had its only backhoe break down or another that may need a particular kind of valve. All they would have to do is pick up the phone and call one of the member utilities and they'd soon be back in business."

Roney urged utilities across the commonwealth to become members of KyWARN.

"KyWARN is like investing in a no-cost insurance policy to access resources," said Roney. "Membership will increase emergency preparedness and coordination, provide rapid access to specialized water and wastewater resources and reduce administrative hassles."

"In the end, this network of utilities will make a huge difference when the next disaster hits."

KyWARN is managed by a steering committee that includes representatives of the Louisville Water Co., Northern Kentucky/Fort Thomas Water District, Louisville/Jefferson County Municipal Sanitation District, Bowling Green Municipal Utilities, Webster County Water District, Paintsville City Utilities and Corbin City Utilities Commission.

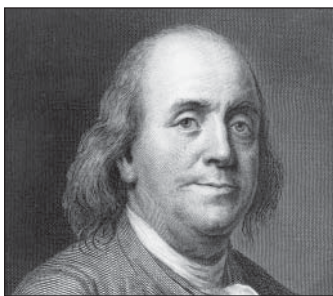
To learn more about KyWARN or to join the network, visit www.kywarn.org or e-mail info@kywarn.org



Fighting bush honeysuckle the Ben Franklin way

By Andrew Berry
Nature Preserves Commission

Ben Franklin’s quotes have long been a source of inspiration for developing work ethics and virtues. His quotes are relevant to many facets of our lives. One particular proverb resounds especially true to those involved in the fight against bush honeysuckle (*Lonicera maackii* (Rupr.) Maxim).



The migration of bush honeysuckle into rural areas has been largely successful with the help of birds that disperse seeds. In woodlands of Kentucky that lie far from human habitation, this species is just beginning to rear its

ugly head. Bush honeysuckle is incredibly invasive, meaning that it can go from nonexistent to being the dominant species in about a decade. Wildflowers begin to disappear as they are shaded out by the early emergence of honeysuckle foliage. Seedlings of native trees and shrubs become stunted, spindly and many perish from competition and the production of allelopathic chemicals (poisonous com-

pounds that inhibit other species growth) in the soil. Once honeysuckle becomes well established you won’t be able to walk through, let alone see through, your woods. The ‘leak’ of the bush honeysuckle further into the wilds of Kentucky may eventually sink the ‘great ship’ we have come to recognize as biodiversity.

“You may delay, but time will not”

Now is the time to act. Landowners and natural area stewards should be watchful for the spread of bush honeysuckle into areas where this species has not yet occurred. This is particularly true for the Eden Shale belt, also known as the Hills of the Bluegrass. This rugged region separates the inner and outer Bluegrass regions and is dominated by pasture, cedar

Originally applied to fire prevention (Franklin organized the first volunteer fire department in 1736), the quote from Poor Richards Almanac reads, *“An ounce of prevention is worth a pound of the cure.”* This quote is appropriate when you consider that the bush honeysuckle problem in Kentucky is spreading like wildfire. Within 10 years a few errant seedlings can become tens of thousands of shrubs. Preventing the establishment of honeysuckle can save you time, money and give you a good chance of winning the battle in your woodlands.

“A small leak can sink a great ship”

The bush honeysuckle problem in Kentucky began in our urban centers where it was planted as an ornamental. Large cities such as Louisville, Covington and Lexington were the first to see the spread of this species into fencerows, neglected woodlots and disturbed areas. Much of the landscape near these towns is now infested beyond practical control.

TOP: Seedlings of bush honeysuckle are often found in fencerows, woodland edges and in cedar thickets. This one is located under a cedar blowdown.

RIGHT: A black locust thicket adjacent to I-75 in Fayette County is heavily infested with bush honeysuckle.

Photos by Andrew Berry
CENTER: Benjamin Franklin. Photo used with permission by the Independence Hall Association



Continued on Page 12

Carrollton regional wastewater plant service spans four counties, draws new industry

RIGHT: The secondary clarifier (seen here) receives the “mixed liquor” from a previous clarifier (either a lagoon or oxidation ditch). The secondary clarifier allows the liquor to be pumped into the circular metal well (in the center of the photo), allowing less suspended solids at the surface. The solids on the bottom of the basin are collected by rotating rakes. The collected solids flow by gravity to a sludge pump station where they are returned to a lagoon or ditch or are wasted.

BELOW: The pump station at the Carrollton plant. Photos by Hossein Mehdipour, DOW



By Alison Simpson
Division of Water

The \$10.8 million Carroll-Gallatin-Owen-Henry Regional Wastewater Treatment Plant that became operational in September 2006 has streamlined sewer services for eight communities in four counties and is expected to be a big factor in area growth over the next 20 years.

Planning for the water utility dates back eight years, when Bill Osborne, general manager of Carrollton Utilities, and Richard Bragg, development planner for the Northern Kentucky Area Development District, met with Gen. James Bickford, then-secretary of the Natural Resources and Environmental Protection Cabinet (known today as the Environmental and Public Protection Cabinet). Discussion revolved around possible alternatives to the proliferation of small package plants serving several communities in the four-county area. At the time, the communities of Sparta and Glencoe were contemplating the construction of package sewer treatment plants to serve local residents.

Bickford suggested it was time to think beyond multiple small plants.

Thus was born the idea for the regional plant, which is located one mile off Interstate 71 between exits 43 and 44 in the midst of hundreds of acres of soybean fields. Osborne said the plant is well positioned to encourage industrial growth.

“The location of the plant is excellent in that it’s close to Campbellsburg and the regional sewer as well as Carrollton,” Osborne said. “There’s a lot of undeveloped properties in and around the plant, and it’s a prime location for industrial development.”

The presence of several large industries already in the area helped spur the decision to construct the plant, said Osborne. North American Stainless, the Kentucky Speedway and BPB (formerly Celotex) had decided to locate there despite the absence of sewer availability.

The plant currently serves the communities of Campbellsburg, Carrollton, Ghent, Glencoe, Prestonsville, Sanders, Sparta and Worthville, but it was designed to anticipate capacity requirements over the next two decades.

The old Carrollton plant used outdated rotating biological contactors and experienced chronic problems with meeting toxicity limits. Violations resulted in an agreed order between the Kentucky Division of Water (DOW) and the city of Carrollton

Funding sources

- Clean Water State Revolving Loan Fund administered by the Kentucky Infrastructure Authority—\$4,744,398
- Rural development grant—\$2,000,000
- Community development block grant—\$1,925,000
- Economic Development Authority grant—\$1,500,000
- Congressional appropriations —\$700,750

Continued to Page 18

Networking group will promote recycling

By Eva Smith-Carroll
Division of Waste Management

Representatives of Kentucky's recycling industry – collectors, processors, brokers and manufacturers who use recycled materials – met earlier this year to lay the groundwork for a new statewide networking organization – the Kentucky Recycling Interest Group (KRIG).

The meeting was sponsored by the Division of Waste Management in the Kentucky Department for Environmental Protection and the Kentucky Pollution Prevention Center (KPPC) at the University of Louisville.

Sixty-nine people attended. Ideas generated at the meeting regarding the focus and goals of KRIG have been used by a steering committee to produce draft mission and vision statements that will be presented at another meeting this summer.

Recycling is of "global importance" and participants in the planning meeting have a "vested interest morally, ethically and financially" in this issue.

Stephen Shaver
North American Stainless

Fred Kirchhoff, supervisor of the division's Recycling Section, said he was pleased with the interest and enthusiasm of the group.

"We tried to invite a small representative sample of those with a stake in recycling, including county-run recycling efforts, private collectors, recycled material processors, brokers and end users because we really had no idea of the interest or turnout to expect," Kirchhoff said. "Based on attendance and enthusiasm expressed, the meeting was a huge success."



Participants in a planning meeting for the Kentucky Recycling Interest Group divided up into teams and brainstormed ideas on the direction of the new organization. Standing, left to right: Fred Kirchhoff, Division of Waste Management, and Rick Moore, Signode, Florence. Seated: Steve Cecil, Green Metals, Georgetown; Mark Bradley, Louisville Metro; and Ralph Smith, Danville Recycling. Photo by Division of Waste Management

Recycling is of "global importance" and participants in the planning meeting have a "vested interest morally, ethically and financially" in this issue, said Stephen Shaver, corporate environmental manager for North American Stainless in Carroll County. Sponsorship of the meeting was a "tremendous service" to the commonwealth.

Formation of a state organization is the first step in an effort that is "sorely needed" to increase recycling and waste reduction in Kentucky, said Donna Fechter, director of solid waste in Boyle County. Fechter said she appreciates the division and KPPC for "setting the tone."

Creation of KRIG was applauded by a regional council that promotes sustainable recycling in the southeast.

"On behalf of the Southeast Recycling Development Council (SERDC), I would like to offer congratulations to the Kentucky Division of Waste Management and others involved in the effort to form a statewide recycling coalition in order to advance recycling in the commonwealth of

Kentucky," said Diane Davis, executive director of the council.

"The benefits of networking and the sharing of contacts, knowledge and expertise cannot be overstated. Uniting industry, government and nongovernmental organizations such as the state recycling organizations to promote sustainable recycling is the core of SERDC's mission and is viewed as a requirement for sustained success in recycling.

"We see this development as a very positive sign that progress is being made in Kentucky toward increased awareness and action to further recycling efforts. SERDC offers support for Kentucky's efforts and hopes to work with those leading this effort as we advance toward our common goals for sustainable recycling."

For more information about KRIG, contact Dara Carlisle with the Division of Waste Management's Kentucky Recycling and Marketing Assistance Program at 502-564-6716 or by e-mail at Dara.Carlisle@ky.gov

DVD, teachers' guide highlights reforestation

By Linda Potter
Department for Natural Resources

Global climate change and environmental concerns no longer reside in the realm of a future world that adults control. Kentucky students are becoming more sophisticated and mature in the realization that the future is theirs. Many of these students will become tomorrow's environmentalists with the energy, knowledge and zeal to protect the natural world.

Coal mining and its impact on the environment is a topic of growing concern. The issues are complex, emotional and often conflicting.

University of Kentucky (UK) faculty members in the Department of Forestry, Biosystems and Agricultural Engineering, the Department of Mining Engineering, the Tracey Farmer Center for the Environment, along with the state Division of Mine Reclamation and Enforcement (DMRE) and the federal Office of Surface

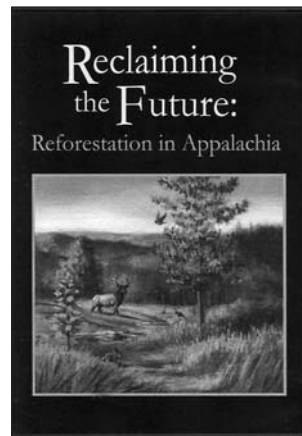
Mining collaborated to develop a DVD and teachers' guide that show students how the impacts of coal mining can be diminished.

Since 1997, UK and DMRE have partnered in reforestation research in developing such reclamation techniques. Their findings demonstrate that healthy forests can be regenerated on previously mined lands with dramatic results. To date, more than 2 million trees have been planted on approximately 3,000 acres across the Kentucky coal fields as part of UK's research efforts, and Kentucky coal companies plant tens of thousands of tree seedlings on their reclaimed mine sites annually. More than 40,000 acres (90 surface mining permits) have been approved in the last two years

that will utilize the reclamation and reforestation techniques developed as part of this collaborative effort.

UK forestry professor, Dr. Don Graves, says it best: "Planting a tree and re-establishing a forest are two different things. We are not just putting trees back on the mine site, but trying to re-establish the function of the forest, which includes enhancing wildlife habitat, improving water quality and stream systems, reduction of erosion and sedimentation, less flooding and cleaner air."

The DVD and guide, *Reclaiming the Future: Reforestation in Appalachia*, are available online at <http://www.bae.uky.edu/UKReclamation/Videos/default.htm>.



Marrowbone Creek State Forest *Continued from Page 2*

protects forest resources by suppressing forest fires, conducting surveys for potential insect and disease threats, monitoring for invasive plants and inspecting timber harvesting practices that protect water quality.

Education is perhaps the most important aspect of the state forest program. Proper stewardship practices and best management practices are demonstrated on the properties to increase landowner, logger and public awareness of the benefits of forests. The division's history with Marrowbone Creek, for example, shows how proper management has improved the production of timber. This is seen in the maturing pine plantations and converted fields. Further evidence is seen in the early-successional woods where timber stand improvement techniques, such as thinning overcrowded trees and removing damaged and undesirable tree species, have allowed more desirable species to thrive.

Phase I of the Marrowbone Creek purchase was completed in December 2007, and Phase II of the purchase (625+ acres) is planned this year in cooperation with the Kentucky Department of Fish and Wildlife Resources. With the addition of Marrowbone Creek, the division now owns and manages seven state forests totaling 38,210 acres.

Funding for the purchase of Marrowbone Creek was made possible through the USDA Forest Service's Forest Legacy Program and the Kentucky Heritage Land Conservation Fund. The Forest Legacy Program is a federal program that works in cooperation with state foresters to acquire property, secure

conservation easements and protect environmentally sensitive forest lands. The Kentucky Heritage Land Conservation Fund is financed through the sale of nature license plates in which funds are used to purchase natural areas and protect them from development.

Marrowbone Creek State Forest will officially open in spring 2008. The division is currently marking boundaries, setting up trails and preparing parking areas for public use. The forest, like all state forests, will be open to the public for hiking, fishing, wildlife viewing and regulated hunting. For more information about Marrowbone Creek and other state forests, visit <http://www.forestry.ky.gov/programs/stateforest/>.

Kentucky State Forests

Green River State Forest – Henderson County (1,106 acres)
Knobs State Forest – Bullitt County (1,159 acres)
Kentonia State Forest – Harlan County (4,277 acres)
Kentucky Ridge State Forest – Bell County (15,251 acres)
Pennyrile State Forest – Caldwell, Christian and Hopkins counties (14,648 acres)
Tygarts State Forest – Carter County (874 acres)
Marrowbone Creek State Forest – Metcalfe and Cumberland counties (1,125 acres)



Yard care 101

by Allison Fleck, Division of Water
 Elizabeth Robb Schmitz, Division for Air Quality
 Joyce Bender, Nature Preserves Commission
 Lynn Brammer, Division of Forestry

With the advent of spring comes a desire to get outdoors, clean up the lawn, till the soil and plant eye-catching arrangements of plantings around the home. Tending your landscape can be a satisfying and rewarding way to spend the evening or a weekend. And, it's good exercise.

However, having a beautiful lawn can take a toll on the environment if it is not maintained in an environmentally conscious way.

Fertilization

It may be hard to believe, but homeowners use ten times more chemical fertilizers per acre than farmers use on farmland. Proper fertilizer use can enhance plant growth without polluting the environment. If improperly applied, excess chemicals can be carried by

storm water runoff into wells, lakes and streams, which can pollute drinking water supplies, harm wildlife habitat and choke waterways.

Phosphorus and nitrogen are the two ingredients most commonly used in fertilizers. When these substances build up in lakes, it leads to an explosion of plant and algae growth, often followed by a massive die-off with the dead vegetation decomposing in the water. This high rate of decomposition uses up the oxygen supply in the water, depriving fish of the oxygen they need to breathe and causing fish kills. Certain algal blooms can even be directly harmful to us if we swim in them.

Nitrogen generally produces the greatest growth response in plants, but its presence in drinking water can cause serious health problems. Nitrogen is completely soluble and not tightly held



TOP: This yard has been converted to less lawn to promote an eco-friendly landscape. Photo by the Louisville Metro Air Pollution Control District.

ABOVE: Appearing on one of the least-wanted invasive plant lists is the Chinese silver grass (*Miscanthus sinensis*), a tall ornamental grass with long, slender, arching leaves and feathery seedheads. Its appearance and no-fuss maintenance make it a popular landscape plant. However, its seeds can blow great distances and become easily established, growing aggressively and smothering out native grasses and wildflowers. Photo by Chris Evans, River to River CWMA

by soil particles. Therefore, nitrates can readily leach downward with percolating water and contaminate groundwater supplies.

Phosphorus from organic compounds, such as lawn clippings and tree leaves, is also highly soluble.

It is actually okay not to fertilize at all. Most lawns can draw the nutrients they need from the clippings that fall back on grass after mowing.

If you decide you need to fertilize occasionally, have your soil tested first. Make sure that at least half of the nitrogen in your fertilizer is slow-release or water insoluble. Slow-release fertilizers are less likely to leach out or wash away in runoff. Apply no more than 1 pound per 1,000 square feet of lawn and fertilize no more than once or possibly twice each year (in April and August). Use a low-spreader setting and water in the fertilizer lightly. Never apply fertilizer before a storm.

Preventing Plant Escapes

Are you sure that the plants you are adding to your yard are going to stay where you put them?

Over the years, a number of species that have been introduced to Kentucky by nurseries and garden enthusiasts have gone AWOL from the areas where they were planted. These invasive non-native plants are leaving your gardens and moving into natural landscapes where they can upset the delicate ecological balances that are in place.

Having been moved beyond the continents of their origin, these non-natives have no natural enemies here to control their numbers. They multiply at the expense of native species, eliminating the beauty of spring woodlands and displacing wildlife by out-competing native species for space, light and nutrients.

Invasive non-native plants are considered to be one of the leading threats to biodiversity, second only to habitat destruction.

Approximately 28 percent of Kentucky's flora is designated as non-native. However, not all non-native species are detrimental. Currently, 92 species are listed by the Kentucky Exotic Pest Plant Council as warranting concern.

How can you tell if the plant you are ready to buy might cause problems

beyond your property line? There are a few characteristics that you can look for on the label or in other information that promotes the plant. When you see phrases like "grows rapidly," "produces large quantities of fruits," "matures early" and "spreads readily from root or stem to cover bare areas"—those can be considered warnings about the potential for aggressive growth.

If you are still unsure, ask about the species' invasive potential from knowledgeable sellers or look on the Internet for more information.

Property owners can consult the Kentucky Exotic Pest Plant Council at <http://se-eppc.org/ky/> for a list of invasive species and useful control methods.



Although popular as a yard planting, the burning bush is considered a severe threat because it spreads easily into native plant communities and displaces native vegetation.
Photo by James H. Miller, USDA Forest Service

Yard Care Tips

Compost yard waste. Mulch provides nutrients, stores water and protects plants from diseases. Yard and food waste are a gardener's gold. Vegetable scraps and coffee grounds can also be added, but do not use meat, dairy or oils, which can attract pests. Turn the compost every few weeks and sprinkle with water in dry weather. It can be ready for use in three months.

Water deeply but infrequently. Watering too much or too little causes many common plant problems. Proper watering means healthier plants, lower water bills and conservation of precious resources.

- Build the soil with compost and mulch to hold water and reduce evaporation.
- Choose low-water-use plants.
- Use soaker hoses or drip irrigation on beds.
- Use an outdoor water timer.
- Water lawns separately from other plantings.
- Water dry soil slowly to enhance absorption.
- Water in early morning.
- Allow an established lawn to go dormant during dry spells. Brown areas will bounce back in the fall.

Make good use of rainfall. Direct downspouts into lawns, rain gardens or rain barrels. Use open pavers, gravel or other pavement options that let rain seep into the soil. Plant dense strips of native trees, shrubs and ground covers next to streams, lakes and ditches to stabilize soil and to slow and filter runoff.

Improved Air Quality

Did you know that mowing your lawn for an hour can emit as much pollution as driving the average passenger car 200 miles? Reducing lawn size—or eliminating lawns altogether—and landscaping with native plants can improve air quality, locally and regionally.

According to the Environmental Protection Agency, gasoline-powered lawn and garden equipment, on average, produces 5 percent of ozone-forming volatile organic compounds (VOCs) in areas with smog problems. This equipment also emits toxic air pollutants and particulate matter.

At the local level, smog (ground-level ozone) and toxic air pollutants can be significantly lowered by reducing or eliminating the need for lawn maintenance equipment. Lawn mowers, weed trimmers and leaf blowers powered by gasoline, electricity and rechargeable battery (generally recharged using the electric grid) are associated with emissions of the following air pollutants: carbon monoxide (CO), carbon dioxide (CO₂), nitrous oxides (NO_x), sulfur dioxide (SO₂), VOCs and air toxics such as benzene.

Regionally, the NO_x and SO₂ released from lawn equipment react with water in the atmosphere to form acid rain. In addition, while electric- and battery-

Continued on Page 16

Inspector training brings ‘dividends’ in the field

By Eva Smith-Carroll
Division of Waste Management

Recently Division of Waste Management personnel from the Underground Storage Tank (UST) and Field Operations branches were trained by Petroleum Training Solutions, a newly formed national training company based in Clinton, Wash.

The company, comprised of tank experts Marcel Moreau, Steve Purpora and Ben Thomas, brought 75 years of combined tank experience to the week-long training event in Frankfort.

Advanced and intermediate underground storage tank inspector training provided 55 division staff with hands-on exercises involving actual testing protocols at active operating tank systems.

“This training event was by far the best course I have been involved with during my tenure with the division. We are already receiving dividends on our training investment,” said Stephen Kent, supervisor of the UST Branch’s Compliance Section. “Within a couple of weeks our inspectors were finding things in the field that they were trained to look for.”



ABOVE: Trainer Steve Purpora, center, explains the “Petro-Tite” testing method to Division of Waste Management inspectors James “Buck” McCloud, Doug Wireman, Curtis Scott, Jennifer Burnett, Kevin Strohmeier and Andrea Rader.

LEFT: Trainer Marcel Moreau conducts a corrosion test during a classroom exercise while inspector Steve Wesley assists.
Division of Waste Management photos

New year, new tools for brownfield redevelopment

By Amanda LeFevre
Division of Compliance Assistance

Believe it or not, there is actually a market for brownfield properties. People do seek them out for investment purposes. To help those who wish to redevelop these properties and communities that want them redeveloped, the Kentucky Brownfield Program has launched an online property submittal system to help populate the state’s official brownfield inventory.

Brownfields dot the landscape of Kentucky from the lakes of the west to the mountains of the east. Brownfields are properties that are abandoned or underutilized due to real or perceived contamination. They can include factories, abandoned gas stations, former dry cleaning establishments, illegal dumps, mine-scarred lands and illegal drug labs. There

are an estimated 8,000 brownfields in the state.

Why would anyone be interested in owning a site with potential contamination? These sites are often located in areas with good existing infrastructure and are close to main transportation routes. Depending on where they are and who owns them, they are eligible for incentives from the private sector, as well as state and federal governments.

The brownfield inventory will serve as a resource for those wanting to locate a business in Kentucky, wishing to expand a current business or wanting to create a public use area. It will also be a tool for cities that seek to redevelop neighborhoods that have experienced decline.

These areas are often blights on the community and do not contribute jobs for the surrounding neighborhoods or tax income for the city. However, by listing and redeveloping these target sites, a city can restore properties to active use, increase the job and local tax base, mitigate public health concerns and improve community image in areas that desperately need to be rehabilitated.

Properties on the inventory will be eligible for brownfield redevelopment incentives that can aid in the assessment and redevelopment of the property. The brownfield program staff will identify incentives available for each site and

Continued to Page 17

Fighting bush honeysuckle the Ben Franklin way

Continued from Page 5

and oak-hickory forest. Cedar forests, which provide cover for wildlife during the winter, are showing honeysuckle seedling establishment at the base of trees where seeds are deposited by birds. Another region experiencing new invasions is the Kentucky River Palisades. Some portions of the palisades, as in Fayette County, have been completely infested for several decades while more remote portions of the river corridor are just beginning to see its presence. The rugged landscape in these areas allows bush honeysuckle to grow undetected until it is too late.

Close examination will help to determine if your woodlands are infested with bush honeysuckle seedlings. Check along fencerows, edges of woodlands and at the base of cedar trees. Also check any areas that have experienced recent disturbance such as tree blowdowns, bulldozer or heavy ATV activity. The best time of year to look for bush honeysuckle is during November and early December when they are one of the few shrubs with leaves remaining. During late February and early March they are also easily distinguished because they are one of the first shrubs to begin leafing out.

Most seedlings can be easily pulled out of the ground with roots intact before they reach the age of reproduction. Larger shrubs can be cut with a hand saw and the stump treated with an herbicide (50 percent Roundup) solution. The key is to fight the invasion early and prevent it from increasing to a level where heavy equipment such as chainsaws becomes necessary and success becomes minimal.

“A great empire, like a great cake, is most easily diminished at the edges”

The goal is to create refuges for native plants while many other habitats in Kentucky are becoming dominated by bush honeysuckle. The best way to accomplish this is to work from the edges of the infestation into the ‘bad’ areas with heavy infestations. Try to keep areas free from new invasions before trying to reverse a well-established bush honeysuckle stand to its original composition. Identify places

with exceptional wildflower displays or high biodiversity and make these sites top priority for protection.

Targeting bush honeysuckle while they are small uses much less energy and equipment. Use of an herbicide wand and hand saw enables treatment of honeysuckle in the backcountry where chainsaws are not feasible. The ability to travel light makes it possible to find and eradicate sources of invasion as soon as they begin. While it is possible to eradicate several hundred seedlings in one day, those same seedlings in 10 years would take a crew with chainsaws up to a week to clear.

There are several other advantages to working on areas not heavily invaded. One advantage is biodiversity often remains high. Light infestations have not yet altered the native vegetation composition and many of these areas will retain wildflowers and shrubs, as well as native tree seedlings. In contrast, native wildflowers, trees seedlings and shrubs are quickly eliminated from infested areas. Clearing heavily infested areas will often not bring

back native species composition without reseeding and rehabilitation.

“Energy and persistence conquer all things”

If the problem is too great to handle, try to kill the larger seed producing plants and come back for the smaller ones later. And remember, don’t get overwhelmed. If the scale of the infestation is beyond your control, you may want to focus on one area. Perhaps it is a beautiful view, a nice patch of wildflowers or a majestic tree. Just do what you can when you can.

One thing we can all be sure of is that bush honeysuckle is coming to a woodland near you. The impact that it has on your land will be dictated by your action or inaction. The best way to fight an aggressive invader is with an aggressive response. Being prepared and knowing what to look for are essential. Getting a hold on the situation before it becomes a monoculture will save you time, labor and money. Remember, “an ounce of prevention is worth a pound of the cure.”

Attention: Kentucky landowners and agencies



Spring planting season is approaching, and the Kentucky Division of Forestry (KDF) is offering low-cost seedlings to Kentucky landowners. The division operates two nurseries that grow native tree species including red and white oaks, persimmon, hickory, black walnut, shortleaf pine, pecan, black locust and more.

The Morgan County Nursery, located at Grassy Creek in Morgan County, and the John P. Rhody Nursery, located at Gilbertsville in Marshall County, specialize in propagating and growing trees that are native to Kentucky.

There are many advantages to planting native trees including conserving biodiversity, attracting wildlife, reducing pollution and saving money.

Most tree species are \$15 per 10 trees or \$25 per 100 trees. This price includes tax and shipping directly to your door. The following species will be sold on a first-come, first-served basis: shortleaf pine, persimmon, black locust, mixed hickory, black oak, bur oak, cherrybark oak, northern red oak, overcup oak, pin oak, shumard oak, southern red oak, swamp chestnut oak, white oak, pecan and black walnut.

For more information about the state nurseries or to obtain a seedling order form visit the KDF Web site at www.forestry.ky.gov/ or call 800-866-0555.

Hazy days of summer

Man-made haze, or air pollution, reduces visibility in many cities and scenic areas



Views from Mammoth Cave National Park's Web cam show the difference between a clear day and hazy day. Each photo was taken at 12 p.m. CST on a July day. (LEFT: Visual range is less than 190 miles. RIGHT: Visual range is less than 10 miles.)

By Martin Luther
Division for Air Quality

Have you ever taken a scenic drive, but weren't able to see the view? The Great Smoky Mountain National Park (GSMNP) offers perhaps the most famous example of a hazy landscape. In fact, the GSMNP was originally named by the Cherokee Indians for a natural haze that has existed there for hundreds of years. Natural haze is formed from a combination of high humidity and hydrocarbons emitted by the trees growing on the mountains. However, for many years the natural haze for which the mountains got their name has been dwarfed by man-made pollution. Man-made haze can make it difficult to even see beyond the first ridge of mountains. It also looks different than natural haze, creating a uniform whitish look to the atmosphere, rather than a mist that clings to the mountains in some places more than others.

Man-made haze is not just a problem in the Smokies. In fact, the same haze that impairs visibility in the Smokies impacts the view closer to home in Mammoth Cave National Park. This is because haze is actually a regional problem for many parts of the nation. Regional haze is typically caused by sources and activities emitting fine particles and other pollutants that lead to fine particle formation, often

transported over large regions. Particles affect visibility through the scattering and absorption of light. Reducing fine particles in the atmosphere is an effective method of improving visibility.

An easily understood measure of visibility to most people is visual range, which is the greatest distance, in kilometers or miles, at which a dark object can be viewed against the sky.

Congress has mandated that states and the U.S. Environmental Protection Agency (EPA) must develop plans to restore natural visibility conditions in Class I areas throughout the nation by the year 2064. There are 156 Class I areas that include national parks, forests and wilderness areas that are a certain size or larger. Mammoth Cave National Park is considered a Class I area.

Although the goal for natural visibility conditions is several years into the future, states had to develop and submit the first phase of their regional haze plans



ABOVE: The EPA has encouraged states and tribes across the U.S. to address visibility impairment from a regional perspective. This VISTA map depicts the Class I areas in the southeast, as well as other Class I areas in nearby states.

Map provided by VISTA

To view the live Web cams at Mammoth Cave National Park and Great Smoky Mountains National Park, go to www.airnow.gov and click on the Web Cams link near the bottom right corner.

Continued on Page 19

KY EXCEL members undertake creative projects

By Mary Jo Harrod
Division of Compliance
Assistance

KY EXCEL members continue to be creative and resourceful in their efforts to improve and enhance the state's environment. From removing garbage from a cave to being environmentally green at auto salvage yards, members are making a positive difference in the environment.

KY EXCEL is Kentucky's voluntary environmental leadership program, which was created in 2006 to improve and protect Kentucky's environment in ways above and beyond what is required by law. There are four levels of membership—master, leader, partner and advocate.

Advocate member **Friends of McConnell Springs** in Lexington decided to film the transformation of



the 22-acre park, where in June 1775, William McConnell and his party of explorers, surveyors and settlers decided to name the town they would create Lexington, after the Battle of Lexington, Massachusetts.

The park is a small part of the 1,400-acre parcel that William McConnell farmed. Since the McConnell days, this site has seen many uses, as farmland, a gunpowder manufacturing point, an industrial water supply source, a trotting horse farm, a dairy farm and almost as a modern industrial site. For several years in the 1970s and early 1980s, the site was a dumping ground for industrial and commercial waste—principally waste building materials—with the intent to

fill it in for use as an industrial building site. The dumping was stopped by virtue of city environmental regulations, and the park was created by the joint action of the city, the Friends of McConnell Springs, private and public contributions and the work of hundreds of volunteers.

The film, which premiered in April at the Kentucky Theater in Lexington, shows how the public and private sectors cooperated to restore and preserve an historic and natural site that is, in many ways, rarely found. McConnell Springs is a true nature preserve surrounded on all sides by industry, commerce, rail and residential uses and underneath by a rock quarry.

Within the park, there is a series of sinking springs and a variety of animal and plant life flourishes, most of it native to Kentucky. Located near downtown Lexington, the park is an oasis to urban residents to view firsthand the natural Kentucky environment.

Besslers U Pull & Save, a do-it-yourself auto salvage yard located in Hebron, is a partner member of the KY EXCEL program. When vehicles are brought to most salvage yards, the fluids are drained, including gasoline, oil, transmission fluid, brake fluid, antifreeze and air-conditioning refrigerant. At Besslers, most of the fluids are reused, and the auto batteries are recycled or resold. Employees fill their automobile tanks after the gasoline has been filtered, which is a wonderful on-the-job benefit. The oil and transmission fluid are burned in waste-oil furnaces that heat the garages in the winter, except during the summer when those fluids are sold to recyclers.

“Bessler Auto Parts is proud to be part of KY EXCEL as we do our part in collecting and reusing the natural resources God has given us,” says Joe Bessler, president of the 12-acre facility. “We have always tried to be environmentally conscious, even when it wasn't required.”

But Bessler continues to go beyond what is required by law. In 2006, the U.S. Environmental Protection Agency

Continued to Page 15



TOP: A rock fence at McConnell Springs will be restored using stones from other fallen fences on the property. Photo provided by Friends of McConnell Springs
LOWER LEFT: A refrigerator pit was removed from Saltpeter Pit Cave through collaborative efforts of KY EXCEL members.

Photo by the American Cave Museum

KY EXCEL members undertake creative projects

Continued from Page 14

started a voluntary program to recycle the mercury-filled switches found in vehicles' hoods and trunks that are used to turn on lights when the lids are raised. Several months ago, Bessler began collecting the switches in an effort to prevent the mercury from ending up in landfills.

"When we became aware that the switches were a pollution problem, we started collecting them to recycle," says Bessler. "It's not required, so we don't have to do it, but it does cut down on pollution."

River Metals Recycling, a subsidiary of The David J. Joseph Co., is a leader member with four locations participating in the program. As one of its voluntary environmental projects, the company partnered with fellow KY EXCEL members American Cave Conservation Association and Kentucky PRIDE, along with Bat Conservation International, Beneficia Foundation and Waste Connections, to remove household trash from Saltpeter Pit Cave, a four-story trash dump known in Pulaski County as "Mount Trashmore."

Located in the karst lands, the cave's vertical entrance was used as a dumping site for household garbage, appliances, tires, rugs and other debris for more than 20 years. The cleanup project was important not only to remove the trash, but also to restore the Rafinesque's big-eared bat and Indiana bat habitat and to protect the area's drinking water supplies, specifically Buck Creek, a tributary to Lake Cumberland.

Due to the special needs of this project, a hauling system was created that has been used since then with other vertical cave cleanups. A heavy-duty trolley mounted on an I beam installed at the cave entrance and polywoven haul bags with handles were used in August 2007 as the Saltpeter Pit project removed 200 tons of metal and other trash from the cave. Approximately 1,376 volunteer hours were spent in the planning and executing of this project.

River Metals Recycling took the metal trash to its Somerset facility and recycled it. The money received from recycling the metal was donated to the American Cave Museum for special projects.



ABOVE: Joe Bessler, president and owner of Besslers U Pull & Save auto salvage yard, shows a bucket of truck and hood light switches that contain mercury, which the salvage yard removes from the junked cars on the lot.

Photo by Besslers U Pull & Save

LEFT: Metal removed and recycled from the Saltpeter Pit Cave netted more than \$500 and then was donated to the American Cave Museum. Photo provided by The David J. Joseph Co.



New KY EXCEL members

Since October 2007, several businesses, individuals, organizations and communities have stepped forward to join KY EXCEL. These 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. Call 1-800-926-8111 for more information or visit <http://www.dca.ky.gov/kyexcel/>.

Advocate

Kentucky Department for Environmental Protection, Division of Enforcement—Frankfort

Gallery NuLu LLC—Louisville
Concord Health Systems—Madisonville

Dawson Springs Health & Rehabilitation Center—Dawson Springs

Ridgewood Terrace Health & Rehabilitation Center—Madisonville

Tradewater Health & Rehabilitation Center—Dawson Springs

Mary Jo Harrod Residence—Frankfort
Bart Schaffer and Marlene Boyle Residence—Shelbyville

John Eisiminger Household—Lawrenceburg

Lexington-Fayette Urban County Government Environmental Commission—Lexington

Partner

Tokico USA Inc.—Berea
Bessler Auto Parts—Wilder
City of Madisonville—Madisonville
Toyotomi America Corp.—Springfield

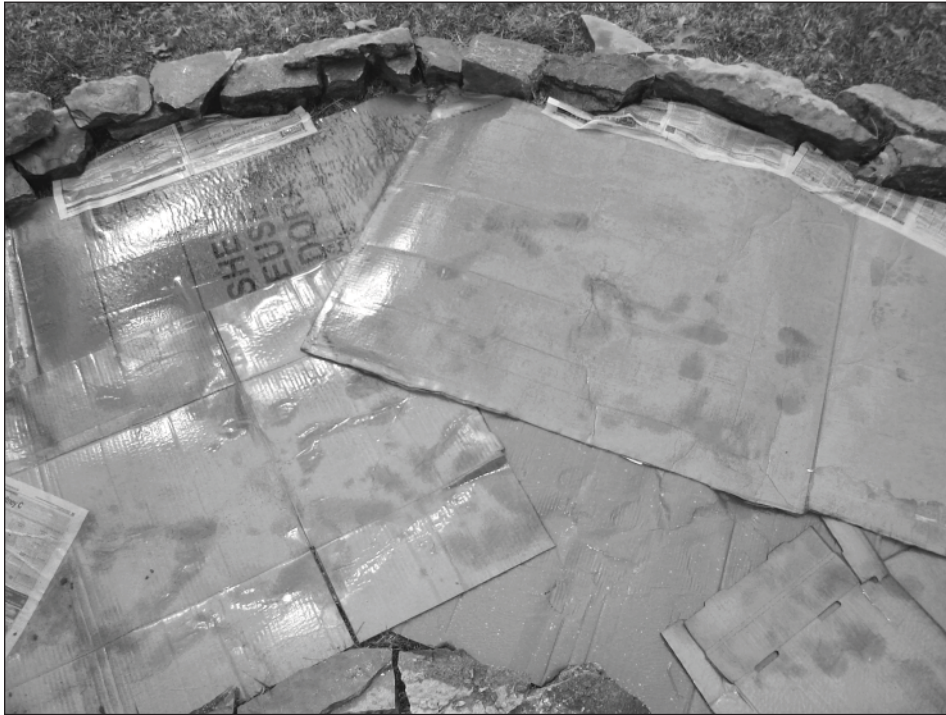
Master

Dow Corning Corp.—Carrollton
Trim Masters Inc.—Nicholasville
Trim Masters Inc.—Bardstown
Trim Masters Inc.—Harrodsburg
Trim Masters Inc.—Leitchfield

Yard care 101 *Continued from Page 10*

Improved Air Quality (continued)

operated equipment can reduce air pollution at the local level, their use still impacts air quality at the regional level. Globally, exchanging your lawn for native landscaping can help to combat global warming in two ways. By reducing the use of landscaping equipment, CO₂ (a major greenhouse gas) emissions are reduced. Also, trees, shrubs and flowers absorb CO₂ and store the carbon in the plants, roots and soil, thus removing the carbon from the atmosphere. The extensive root systems and increased ability to retain and store water of native plants mean that they work much better than traditional mowed grass as a carbon sink.



Sheet mulching: an easy way to reduce or eliminate your lawn

Consider utilizing newspaper or cardboard mulch when reducing your lawn. This can significantly ease a task that otherwise can be quite difficult and eliminate unsightly plastic that inevitably breaks down and shows through your mulch. Plus, it is a great way to reuse an existing resource.

Step 1: Thoroughly wet the area you plan to cover.

Step 2: If you are using cardboard, begin “tiling” the cardboard, laying it down on the ground. Make sure the edges of the cardboard that show are up-slope. This will allow water to drain underneath the cardboard, ensuring that your plants will receive moisture. Once the cardboard “tiles” are laid, water them thoroughly.

If using newspaper, open up a newspaper section to its full size, keeping two to three sheets together, then thoroughly wet them before tiling them as described above for cardboard. (Hint—cardboard will take much longer to break down, effectively minimizing weeds for a longer period of time.)

Step 3: Cover the cardboard or newspaper with mulch.

Step 4: Lay out plants in the general arrangement that you want them. Be sure to leave room for them to grow.

Step 5: Using a hand trowel, cut a small hole through the cardboard and into the earth, making just enough space to insert your plant. Cover the hole with earth and cover to the base of your plant with mulch. Repeat for all your plantings.

Native Plant Nurseries in Kentucky

Native plant nurseries offer an alternative to the colorful, yet invasive, exotics that most nurseries and garden centers promote.

There are many advantages to landscaping with native plants, including conserving biodiversity, attracting wildlife, reducing pollution and saving money.

Native plants evolved naturally over thousands of years in local conditions; therefore, they are adapted to surviving harsh winters, severe droughts, and destructive insects and diseases. As a result, gardening with native plants requires less maintenance and little to no fertilization or water.

There are many species suitable for various soil, drainage and light conditions. Kentucky has native plant nurseries that specialize in propagating and growing these species. The Kentucky Division of Forestry operates two nurseries that grow native tree species including red and white oaks, persimmon, redbud, dogwood, pines and more.

The following list provides contact information for the two state nurseries, as well as other native plant nurseries in Kentucky.

- John P. Rhody Nursery (operated by the Division of Forestry)—Gilbertsville 800-866-0803 or 270-362-8331
 - Morgan County Nursery (operated by the Division of Forestry)—West Liberty 606-743-3511
 - Dabney Herbs—Louisville 502-893-5198, e-mail: info@dabneyherbs.com, Web: www.dabneyherbs.com
 - Dropseed Native Nursery—Goshen 502-439-9033, e-mail: margaret@dropseed-nursery.com, Web: www.dropseednursery.com
 - Habitats Native Plant Nursery LLC—Silver Grove 859-442-9414, e-mail: native@habitatsnursery.org, Web: www.habitatsnursery.org
 - Jane’s Native Seeds—Frankfort 502-750-1571
 - M&M Native Grass Seed Co.—Stephensport 270-547-6855
 - Nolin River Nut Tree Nursery—Upton 270-369-8551, e-mail: john.brittain@gte.net, Web: www.nolinnursery.com
 - Shooting Star Nursery—Georgetown 502-867-7979, e-mail: shootingstarnursery@msn.com, Web: shootingstarnursery.com
 - Wearren and Sons Nurseries Inc.—Taylorsville 502-252-7788, e-mail: wearrenson@aol.com
- Source: <http://www.plantnative.org/index.htm>

ECAP program aids regulated entities

By Mary Jo Harrod
Division of Compliance Assistance



Help is here for regulated entities trying to understand and comply with environmental standards. The Environmental Compliance Assistance Program (ECAP), which is part of the Division of Compliance Assistance in the Department for Environmental Protection, was created to assist regulated entities in understanding and complying with environmental obligations, advocate for those entities underrepresented in the regulatory process and facilitate moving beyond compliance to environmental leadership. The division especially wants to assist small businesses and communities that often do not have the financial resources necessary to hire full-time environmental employees. Best of all, ECAP services are free.

When Murakami Manufacturing Inc. of Campbellsville called for assistance, ECAP representatives, along with Division of Waste Management staff, met with Murakami representative Cathy Gregory to make recommendations on where the company could make improvements and discuss ways to prevent pollution. They toured the plant, did a multimedia audit, reviewed records and permits, and focused on air, water and waste issues.

“The visit was very informative and helpful in many ways,” wrote Gregory, in a note to compliance assistance staff. “We are taking action on many issues that were pointed out to us during this audit. Complete compliance is definitely in reach in the near future for Murakami due to your efforts. I will definitely be keeping communication lines open and will look forward to talking to each of you. Thanks again for all of your help.”

In other instances, ECAP representatives helped a hospital pharmacy identify hazardous pharmaceutical wastes and advised hospital staff about how to manage the wastes properly. This led ECAP staff to create a pharmaceutical waste training program.

When an injection molding facility was undergoing an expansion, company officials called ECAP for assistance in

complying with storm water construction best management practices.

A greenhouse owner needed ECAP assistance in calculating emissions for a new coal-fired boiler and completing the resulting paperwork.

In another instance, ECAP was contacted for assistance prior to a third-party audit for a facility preparing for the ISO14001 certification, which is achieved by establishing environmental management standards to minimize how their operations adversely affect air, water, or land; complying with applicable laws, regulations and other environmentally oriented requirements; and continually improving on these.

In a recent survey, a company was asked for comments about ECAP and replied, “This is one of the best moves the state has [made] in years.”

For more information about ECAP, call 800-926-8111.

Gene Harrison (right), compliance assistance specialist for the Division of Compliance Assistance, provides compliance advice to an employee of the Georgetown wastewater treatment plant. DCA photo

New year, new tools for brownfield redevelopment

Continued from Page 11

actively market the sites to those interested in brownfield redevelopment. By marketing the properties and providing incentives for buyers, it will provide a climate where brownfield redevelopment can become the norm, rather than the exception to the rule. Check out the brownfield inventory registration Web site at <http://www.dca.ky.gov/brownfields/>.

Another brownfield program tool that has recently been developed is the “Toolbox for Cleanup and Redevelopment of Contaminated Sites in Small Cities and Rural Communities.” This document is a step-by-step guide to the process and requirements of cleaning up property with suspected environmental contamination. Originally produced by the Association of State and Territorial Solid Waste Management Officials, the guide has been modified to reflect each state’s laws, regulations and incentives available in their area. The toolbox identifies five steps in the redevelopment process from assessment to redeveloping and marketing sites.

The program is also working on a guide for municipalities that wish to develop their own brownfield program. It will have information on developing funding sources, pulling together key personnel and creating one-stop shopping for brownfield redevelopment. Be on the lookout for this document on the program’s Web site at www.dca.ky.gov/brownfields/.

If you have any questions regarding the inventory, new documents or the brownfield program itself, contact Amanda LeFevre at 800-926-8111.

Oil and gas locator will prevent accidents, environmental damage

By Linda Potter
Department for Natural Resources

Two incidents involving mining operations and oil and gas production activities prompted improvements to the Kentucky Mine Mapping Information System Web site <http://minemaps.ky.gov/>

In the first instance, a mining crew of 12 narrowly escaped serious, if not fatal, injury when conventional mining equipment penetrated the outer well casing of an active gas well. Unfortunately, the owner of the gas well had not identified the well on any of the mine map projections submitted to the Department for Natural Resources. Gas was detected and the miners evacuated, avoiding what could have been a disaster.

A second event resulted in a landslide with significant environmental damage and property destruction. A drilling company was drilling a gas well when the drill intercepted the mine pool of an abandoned underground mine that allowed saturation of the steep slope, causing a landslide.

The mine mapping site initially used an interface to the oil and gas well data from the Kentucky Geological Survey (KGS), a coordinated effort between the KGS and the Division of Oil and Gas Conservation (DOGC). To alleviate any time lapse in the dissemination of the data, the project team developed a process to link directly to the DOGC database. Permit data from the DOGC, such as location, depth, type, surface elevation and ownership is automatically retrieved by the system and displayed. The new oil and gas information is updated daily as an extract from the oil and gas database.

The landslide prompted the creation of the Spot Well Utility for both the mining and the oil and gas industries. By entering the latitude and longitude of a proposed well, the utility will identify underground mines around that well.



A landslide (lower left portion of photo) resulted when a drilling rig (upper right-hand portion of photo) intercepted a mine pool of an abandoned underground mine. Photo by J. Hamon, DMRE

Created in 2003, the Kentucky Mine Mapping Information System Web site is a valuable resource to Kentuckians involved in the mining of coal and oil and gas production or exploration. The oil and gas well data, used in conjunction with the mine maps, can prevent mine accidents and environmental damage when active or abandoned underground mines are encountered.

The Web site was recently redesigned to improve usability and appearance. Links to all functions are easier to locate, and the material throughout the site is better organized with a minimum of clutter. In addition, Frequently Asked Questions, the Spot Well Utility and Coal Seam Listings have been added. Check out the new improvements at <http://minemaps.ky.gov>

Carrollton regional plant service spans four counties, draws new industry *Continued from Page 6*

to replace the old plant.

Carrollton Utilities has wasted no time in extending public sewer service to more residents in the four-county area. A \$2 million project recently completed provides service to residents in the Happy Hollow development on the Carroll County side of Eagle Creek.

Phase two of that project will provide service to residents on the Owen County side of Eagle Creek, which has been plagued for years by pollution from failing septic systems and straight pipes. So far, the city has obtained \$200,000 of the \$2.1 million needed to fund the project. The \$200,000 is part of a Supplemental Environmental Project (SEP) that resulted from a 2005 oil pipeline spill on the Kentucky River. The spill affected a 16-mile stretch of the river in Owen and Carroll counties. The Mid-Valley Pipeline Co. paid a \$1.17 million penalty to the state, plus the SEP. Bluegrass PRIDE, a nonprofit environmental organization selected to manage the SEP, is working with Carrollton Utilities

on the Eagle Creek project.

Bragg said the project qualifies for a community development block grant and that he hopes construction can begin this spring. Provision of service to industrial customers in Ghent is also anticipated in the near future.

Osborne said community response to the plant has been very positive.

“There has been a lot of community involvement from day one from the cities and counties involved,” he said. “We weren’t sure how many people would willingly tie on when there is a tap fee, but over 90 percent have connected.”

Osborne said treatment results have also been outstanding since the plant went on line.

“From an effluent regard, we’ve been in complete compliance from day one,” he said. Osborne added that the city plans to apply for a DOW plant performance award as soon as the required months of monitoring history have been logged.

EPA taps two Kentucky water systems for national awards

Utilities in Frankfort, Paducah lauded for consumer confidence reports

By Allison Fleck
Division of Water

Each year, the U.S. Environmental Protection Agency (EPA) presents Consumer Confidence Reports Excellence Awards to recognize the commitment of local administration and plant personnel in providing their customers with exemplary drinking water reports.

In 2007, two Kentucky utilities were among six selected for awards from Region 4, which also includes Alabama, Florida, Georgia, North Carolina, South Carolina, Tennessee and six tribes.

The Imperial Mobile Home Park in Frankfort won in the small surface water system category, while Paducah Water/Reidland won in the medium groundwater system category.

Donna Marlin, manager of the Drinking Water Branch in the Division of Water, nominated the utilities for the awards and said the two water systems are to be congratulated.

“Winning this prestigious award at the county, district, state or regional level demonstrates your achievements and commitment to your customers,” she said. “Both these utilities should be proud of their accomplishments as they strive to

“Both these utilities should be proud of their accomplishments as they strive to provide clean, safe drinking water while educating their customers about issues like source protection, pollution prevention and conservation.”

Donna Marlin
Division of Water

provide clean, safe drinking water while educating their customers about issues like source protection, pollution prevention and conservation.”

When reviewing submissions for the awards, EPA gives additional points for outreach and educational activities such as utility tours, school presentations, news articles, water conservation activities and the appearance of the report.

Imperial Mobile Home Park water utility serves a population of 455, while Paducah Water/Reidland serves a population of 9,255. Marlin said population is not an issue when it comes to beneficial water quality information.

“Consumer Confidence Reports are the centerpiece of the right-to-know provisions in the 1996 amendments to the Safe Drinking Water Act,” she said. “This awards program encourages water utilities to go above and beyond the basic requirements for public information and participation.”

“Must be something in the water.”

If you want to know what is in your water, take time to read the annual Consumer Confidence Report provided by your water utility. The U.S. Environmental Protection Agency (EPA) requires community water systems to put annual drinking water quality reports into the hands of their customers in the belief that the public has a right to know about local environmental information.

Every community water system that serves at least 25 residents year round, or that has at least 15 service connections, must prepare and distribute the reports. These systems typically include cities, towns, homeowners associations and mobile home parks.

Reports must notify customers of sources used, any detected contaminants, compliance with regulations and educational information.

Designed in consultation with water suppliers, environmental groups and the states, the reports enable consumers to make practical, knowledgeable decisions about their health and their environment.

“Educated consumers are more likely to help protect drinking water sources and to be more understanding of the need to upgrade the treatment facilities that make their drinking water safe,” said Sandy Gruzsky, acting director of the Kentucky Division of Water.

The Consumer Confidence Reports are due to customers by July 1 of each year.

Hazy days of summer *Continued from Page 13*

in December 2007. In that report, and in future reports, states must demonstrate an incremental, uniform rate of progress toward meeting the federal mandate for visibility in 2064. In addition, states had to determine if emissions from within their boundaries were having an adverse impact on other Class I areas meeting their incremental progress of achieving the national visibility goals.

The development of these regional haze plans was accomplished through coordinating information and modeling conducted by a regional planning organization (RPO). VISTAS (Visibility Improvement - State and Tribal Association of the Southeast) is the RPO performing the modeling and emissions analysis that was used in the southeast states to develop these plans. VISTAS included representation from Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia and the eastern band of the Cherokee Indians.

As federally required, the Division for Air Quality submitted Kentucky's draft plan to the Federal Land Managers for review in December 2007. After receiving comments on the draft document and making any necessary revisions, the agency posted the plan for public review and submitted it to the EPA in March 2008. The public hearing was held in April.

awards

Archer selected for biological diversity protection award

By Don Dott and Leslie Isaman
Nature Preserves Commission



Hugh Archer has unquestionably been a leader in the protection and conservation of Kentucky's natural resources, natural areas and rare species. For the past 25 years, Hugh has been involved in almost every aspect of the conservation community. His dedication has always gone beyond "just a job," and he has committed countless personal hours, days and years to the cause.

In past years, Hugh has held many positions in both the private and nonprofit sectors as well as state government. Hugh began his environmental protection efforts in 1977 as an attorney and planner with

the former Kentucky Natural Resources and Environmental Protection Cabinet.

From 1981 to 1986 Hugh was the director of the Kentucky Chapter of The Nature Conservancy where he helped establish 16 nature preserves and negotiated hundreds of private protection agreements. He conducted fund-raising to hire a much-needed staff, while crisscrossing Kentucky to visit landowners and negotiate land protection deals. One of his first projects was the acquisition of Bad Branch State Nature Preserve in Letcher County.

Hugh became the commissioner of the Kentucky State Nature Preserves Commission (KSNPC) in 1989 and served as its chairman from 1990 to 1995. He supported the commission by helping to find funding, monitoring legislation and promoting the organization's agenda.

From 1995 to 1998, Hugh was executive director of the Kentucky River Authority, where he initiated numerous projects to protect the natural resources of the Kentucky River and its watershed. Hugh continues to be active in watershed protection and currently serves on the Kentucky Waterways Alliance Governing Council.

From 1998 to 2004, Hugh was commissioner of the Department for Natural Resources where he had oversight of the Divisions of Forestry, Conservation and Energy, as well as KSNPC and served on at least 29 boards and commissions.

In 1994 Hugh helped form the Kentucky Natural Lands Trust (KNLT), a private nonprofit land trust, and became its first chairman. KNLT has raised more than \$3 million to purchase and protect Blanton Forest in Harlan County and also developed the Pine Mountain Legacy project that will protect more than 151,000 acres spanning five Kentucky counties and part of Virginia.

As KNLT's executive director, Hugh has overseen the acquisition and permanent protection of more than 2,000 acres and has initiated a sustainable forestry project on more than 700 acres.

Cooper receives volunteer steward award

By Joyce Bender
Nature Preserves Commission

Mary Carol Cooper has been a volunteer for the Kentucky State Nature Preserves Commission (KSNPC) since 1993. Her first volunteer workday was at Brigadoon State Nature Preserve in Barren County. She coordinated a group of Sierra Club members to help build a trail through the original tract. The trail was completed that same day, and the KSNPC realized it had gained a dedicated ally in its efforts to manage and protect the state nature preserve system.

Mary Carol continued to round up friends, Sierra Club members and Kentucky Native Plant Society members for workdays. Through the years and many volunteer outings, her cheerfulness and willing attitude has made the work go well and brought the volunteers in numbers.

Mary Carol's commitment to the environment is reflected in her professional life as well as her personal life. She serves Kentucky's citizens as the Department of Fish and Wildlife Resources native plant program coordinator, where she helps Salato Center visitors and backyard garden enthusiasts understand the value of using native plants to create wildlife havens on their own properties. She has introduced the concept of biodiversity protection to a wide and appreciative audience. She is an officer with the Kentucky Exotic Pest Plant Council and has helped with public outreach projects including Weed Awareness Week, invasive plant training sessions for the public and government personnel, as well as hosting the 2003 Southeast Exotic Pest Plant Council's annual symposium.

Mary Carol cares about the Earth. She nurtures it and the people who work to protect it. Her contributions are great, and this award is a humble attempt to give her the recognition she deserves.



Orientation presents dangers, concerns about meth

In response to Kentucky's new meth lab cleanup law, contractors who decontaminate meth labs must be certified by the Environmental and Public Protection Cabinet (EPPC).

As a means of helping these contractors learn more about the cleanup program, the EPPC's Division of Waste Management sponsored an orientation in February that provided information on cleanup issues and stressed the importance of building working relationships with various state agencies involved in the cleanup process.

Featured speaker Jim Morrison, with the Tennessee Department of Education and Conservation, helped research and develop a tiered approach to meth lab cleanup responses and quarantines currently used in Tennessee. He said the program is all about protecting the children and pregnant women.

"These infants and fetuses are

exposed to chemicals that can cause irreversible health problems," Morrison said. "Being around contaminants at such an early age is detrimental to proper development, and immune systems are not strong enough to handle the everyday exposure."

The primary purpose of Kentucky's law is to ensure that former meth lab properties are properly decontaminated so that they can be reoccupied by future buyers or tenants. Therefore, contractors need to be properly trained to deal with the hazardous chemical residuals left behind after the bulk chemicals and chemical wastes are removed by law enforcement.

Methamphetamine, or meth, is cooked in illegal makeshift labs using anhydrous



Contractors listen to Jim Morrison during a presentation at the meth lab cleanup orientation. Photo by Ricki Gardenhire

ammonia, which can cause explosions or fire. The process of cooking meth leaves behind hazardous wastes that contaminate the site.

Currently, there are 15 certified contractors in Kentucky.

For more information on Kentucky's meth cleanup law and cleanup standards, go to <http://www.waste.ky.gov/branches/sf/meth.htm>



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