

Land, Air & Water
Fall 2004

Blue Grass Army Depot submits work plan for one-ton container

By Shannon Powers
Division of Waste Management

The Blue Grass Army Depot (BGAD) at Richmond has submitted a work plan to the cabinet's Division of Waste Management that provides a detailed account of how the depot plans to replace the deteriorating plugs of its Sarin one-ton container (OTC) and collect a sample of the agent for studies pertaining to the future destruction of the container's contents.

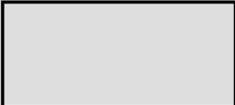
Sarin is a highly toxic nerve agent manufactured by the Army specifically for chemical warfare.

The Division of Waste Management placed public notices in Richmond newspapers and the Lexington Herald-Leader announcing that the work plan was available for public comment from June 26 to Aug. 10. This process gave concerned citizens and government agencies the opportunity to evaluate BGAD's ability to comply with hazardous waste management regulations promulgated under the Kentucky Revised Statutes. After consideration of all written comments and requirements of state laws and regulations, the division will make a final decision regarding approval of the work plan.

Chemical weapons at the depot are stored in earth-covered bunkers called igloos. According to the work plan, the OTC must be moved from inside its storage igloo onto the outside apron. The plug replacement and sampling will take place inside a glove box with filters that provide negative air pressure. A team of experts from Utah's Deseret Chemical Depot will assist with the changing of the plugs and the collection of the Sarin sample.

BGAD will conduct this one-day operation when the meteorological conditions and downwind hazard plot indicates that the risk to human health and the environment will be at a minimum. According to the plan, emergency response personnel and equipment will be on hand in the rare event of a spill.

For more information, contact Shannon Powers at (502) 564-6716 or e-mail shannonl.powers@ky.gov


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This fall scene at Quiet Trails State Nature Preserve was photographed by Dave Crawford. Quiet Trails is located in Harrison County bordering the Licking River.

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Short's goldenrod is considered one of the rarest plants on Earth. It was discovered in Louisville in 1840. Photo provided by the Kentucky State Nature Preserves Commission

Volunteers and staff help one of Kentucky's rarest plants

By David Skinner and Joyce Bender
Kentucky State Nature Preserves Commission

One of the rarest plants in Kentucky is also one of the rarest on Earth. Short's goldenrod (*Solidago shortii*) is federally and state listed as an endangered species. Charles W. Short, an early Louisville physician and botanist, discovered Short's goldenrod in 1840 at the Falls of the Ohio. When the locks and dams were built on the Ohio River this population of the plant was inundated and lost. At the time, this was the only known population of Short's goldenrod.

In 1939 E. Lucy Braun, a renowned botanist and ecologist, rediscovered the plant in Robertson County, Kentucky. Fortunately, some of these plants were on land that became Blue Licks Battlefield State Park. To protect this imperiled plant, a portion of the park was dedicated as a state nature preserve in 1981. A two-square-mile area around Blue Licks harbored the only known Short's goldenrod populations until 2001 when a new population was discovered in southern Indiana along the Blue River. Even with this new population, Short's goldenrod is a critically imperiled species in need of protection and careful management.

In recent years, Kentucky State Nature Preserves Commission (KSNPC) staff have implemented a multifaceted approach to manage Short's goldenrod. Exotic invasive species, such as sweet clover, nodding thistle, crown vetch and Kentucky 31 fescue threaten to displace the goldenrod from its native habitat. Mechanical methods of removing these non-native plants, and the judicious use of herbicides are helping to reclaim some of the lost habitat.

Another problem the goldenrod faces is being shaded out by encroaching trees. Nature preserve management practices often protect trees, but in this situation, trees are impeding a viable population of the plant.

Prescribed fire has been implemented to help eliminate small- to medium-sized trees. The fires also help eradicate some exotic plant species and stimulate the growth of the Short's goldenrod and other native species. Despite the benefits of the fire, the prescribed burns are not intense enough to impact the larger trees. With the aid of Sierra Club and Native Plant Society

Continued on Page 4

Goldenrod gets bum rap from allergy sufferers

By Joyce Bender
Kentucky State Nature Preserves Commission

When goldenrods show their bright yellow flowers in late summer, many Kentuckians are beset with itchy eyes, runny noses and scratchy throats. Hay fever season brings suffering that doesn't end until autumn frosts kill the pollen-spewing culprits. Many people believe goldenrod is the source of their misery. This myth continues because the real offender, ragweed, isn't very showy and hangs out in the background. But, your nose knows it's there.

Ragweed is considered to be the leading contributor to hay fever, not Kentucky's official wildflower. The Common and Giant ragweeds are both found in Kentucky and bloom at the same time as goldenrods. These nondescript plants lack the vivid flowers that attract insect pollinators to the goldenrod. Insects pick up goldenrod pollen, but human exposure to this type of pollen is minimal.

Ragweed, however, reproduces by wind pollination, and ragweed's flowers are pollen producing factories. It is estimated that one ragweed plant can produce more than a billion grains of pollen. With that kind of output, it is easy to understand how only a few plants and a slight breeze can make so many people reach for their antihistamines.



Kentucky volunteers battle blazes out west

By Gwen Holt
Division of Forestry



LEFT: *Fighting the forest fires in Alaska provided volunteers with many challenges, including remote areas and the frozen tundra.*

BELOW: *Pots Peak in Washington state.*

BOTTOM: *Sarah Gracey rests inside her tent in Fairbanks, Alaska.*

Photos by the Division of Forestry



Rain, rain and more rain has been the norm in Kentucky for the last several months. Adequate rainfall and milder temperatures resulted in very few forest fires in Kentucky this spring and early summer. Kentucky's "typical" forest fire hazard seasons are in the fall and spring.

The western United States did not receive the same timely rains as Kentucky. Firefighters from all over the nation were called in to help put out the flames. The Kentucky Division of Forestry sent five division employees to assist with the fires.

Due to the remoteness of many of these fires, most firefighters stay in a camp with tents and very little else. Conditions can range from extreme heat and cold to very rugged terrain. Most camps have catering services set up to prepare meals, and a hot breakfast and dinner is provided to the firefighters. Most carry a sack lunch to the fireline. There is very little opportunity to call home and showering is sometimes out of the back of a tractor trailer. This

definitely is not a luxurious assignment, but the division never lacks for volunteers.

In June, District Forester Ron Meyer, of the Bluegrass District Office in Frankfort, was the first division employee to be detailed to an out-of-state fire. He was sent to Payson, Arizona to assist in what turned out to be the second largest wildfire in the



state's history. Meyer spoke with the local media, answered phone calls from concerned citizens, established communication centers throughout the community, and kept firefighters informed of current events and other critical information. "Calming the fears of local citizens through education and fire updates provides a

great deal of satisfaction. I feel I am making a difference," Meyers said.

Sarah Gracey, an urban forestry coordinator in Frankfort, was sent to Fairbanks, Alaska in July. While there, Gracey experienced first hand the long Alaskan days. "There was never complete darkness, not even at 3 a.m. My work shift typically ended at midnight, and it was odd getting used to sleeping in full sunlight," she said. Many people put black plastic over their tents to block out the sunlight. Gracey also said that walking on the tundra was a strange experience. "It was like walking on spongy moss 2 to 3 feet thick," she said.

The tundra presents some unique hazards for firefighters. Its naturally thick organic material makes walking very difficult and fire shelters unsafe due to its unstable surface.

District Forester Chuck Wilburn, from the division's Northeastern District office in Morehead, was also assigned to Alaska just northeast of Fairbanks. As a field observer, Wilburn mapped the parameters of the fire on foot and from the air using a Global Positioning System (GPS) unit. He

Continued on Page 15

Kentucky—a leader in environmental education

By **Kate Shanks**

Office of Communications and Public Outreach

When environmental educators tell people that Kentucky is on the cutting edge of environmental education, they often have some explaining to do. People are sometimes surprised to hear this. It is true, and there are many reasons why other states turn to Kentucky for guidance on environmental education. One reason for this is Kentucky's state master plan for environmental education, "Land, Legacy and Learning II."

This document was first released in 1999 by the Kentucky Environmental Education Council when more than 200 experts involved in environmental educa-



tion came together to determine what agencies should be doing to better educate Kentuckians. It was not a quick endeavor; it took two years and countless committee meetings to form the first version of the plan. The update took much less time but is no less important.

"Land, Legacy and Learning II" was just published and while it lists several recommendations for state agencies, it also describes the environmental education accomplishments made in the last five years. These accomplishments explain why Kentucky is on the cutting edge of environmental education.

Since 1999, opportunities were developed to better prepare formal and nonformal educators to teach about the environment. For example, in 2002 the Kentucky Education Professional Standards Board (EPSB) announced that all teacher certification programs should include environmental education. The following year the EPSB approved an endorsement in environmental education. Now teachers can receive specialized training in integrating the environment into their curriculum. Nonformal educators or resource teachers can also take advantage of professional development as Kentucky now has a rigorous certification program for nonformal educators.

To assist with these professional development programs and to provide regional programming, Kentucky University Partnership for Environmental Education was formed with the financial support of the Kentucky PRIDE bond fund. There are now centers for environmental education in each of the eight state universities that are charged with providing assistance in program planning.

Environmental educators have long understood the need for partnering to better educate Kentuckians about their environment. In response to this, an interagency committee was formed at the cabinet level to allow representatives from different agencies to meet regularly to plan, share resources and create environmental education programs.

"The committee serves a vital role for state agencies that provide environmental education services. Key cabinet staff meet on a regular basis to share ideas, ensure minimal overlapping of services, which increases government efficiency, and provide support and recommendations to the Kentucky Environmental Education Council," said Carey Tichenor, state naturalist for the Department of Parks.

One product of this partnership is a pilot program to educate Kentuckians about water quality in the state. More



ABOVE: *Cheryl Messenger, educator at Mammoth Cave National Park, examines an owl pellet during part of the certification program for nonformal educators.*

LEFT: *(left to right) Rayetta Boone (Department of Agriculture), Doug McClaren (extension service) and Sara Helton (Eastern Kentucky PRIDE) study the forest ecosystem during certification.* Photos provided by Joe Baust, Murray State University Center for Environmental Education

than 20 agencies are participating in this \$1.2 million project.

There are still many reasons why other states turn to Kentucky for guidance. For example, Kentucky boasts strong leadership in the North American Association for Environmental Education. The president-elect and two past presidents are Kentucky residents.

Ultimately there is much work that lies before any environmental educator. However, what is important is that in Kentucky environmental educators have the tools, the resources and the partners they need to get the job done.

If you ever hear that Kentucky is on the cutting edge of environmental education don't be surprised; just be happy to know that you live in a state where environmental literacy is a priority of many.

View the state's master plan at <http://www.environment.ky.gov/education>



KPPC and the Division of Energy team up to promote energy efficiency

By Julie Smither
Division of Energy

Kentucky businesses constantly face the challenge of making the best use of their resources in the face of rising energy costs. In 2001, the Kentucky Division of Energy (KDOE) and the Kentucky Pollution Prevention Center (KPPC), a state-funded organization that provides pollution prevention technical



Onsite assessments are the cornerstone of the KPPC-KDOE partnership. Photograph provided by the KPPC

assistance, training and applied research, established the Kentucky Energy Efficiency (E2) Initiative to help Commonwealth businesses meet that challenge. The partnership began with one goal in mind—to reduce the environmental impact of energy consumption in Kentucky by diffusing the best available E2 technology throughout the state's business community. This protects the environment by reducing the burning and consumption of fossil fuel and also saves businesses a significant amount of money in operating costs each year.

The KPPC is affiliated with the University of Louisville and began providing energy efficiency audits in 2000. Sixteen audits were performed last year, in addition to the 21 performed between 2000-2003, resulting in thousands of dollars saved in utility bills. Audits have been conducted in businesses, schools, municipalities, state and federal buildings and factories. One company's bill was cut by \$100,000 each year.

University co-op students have been involved in conducting energy audits. Not only does this benefit the auditors, but it gives students a real-world perspective on how energy efficiency can compliment business profitability and help the environment.

KPPC held energy management workshops attended by representatives from Lexington-Fayette County Urban Government (LFCUG), which afterward put together its energy management team. LFCUG has since received a number of onsite energy assessments, including the police headquarters, the city fleet services building, two wastewater treatment plants and a fire station, that have identified 18 different energy savings opportunities, potentially saving \$190,000 annually.

Tom Webb, environmental compliance coordinator for LFCUG, said, "KPPC's assistance has been very helpful in our efforts to become more energy efficient. During these audits, the KPPC reviews utility information, rate structure, facility operations, heating and air conditioning systems and lighting to identify areas where we can reduce energy usage."

Grant funding from the Division of Energy was recently used to hire KPPC's new energy assessment auditor, Sieglinde Kinne. Kinne's experience with the Colorado State University Industrial Assessment Center and her audit experience with companies in western states are invaluable to improving KPPC's expertise. Companies utilizing the services of the KPPC reduce their operational costs by pollution prevention and energy efficiency. KPPC's services provide a more robust capability to help Kentucky's industries remain competitive in world markets.

See the KPPC's Web site at www.kppc.org and the Division of Energy's Web site at www.energy.ky.gov

Volunteers and staff help one of Kentucky's rarest plants

Continued from Page 1

volunteers, the KSNPC has cleared an area that was overridden with red cedar trees. This work was done during the winter rather than the growing season to avoid damaging the goldenrod plants.

In addition to helping this federally endangered plant, the KSNPC is restoring the Blue Licks landscape to a condition more similar to what existed when Europeans first settled in the area. In S.M. Wilson's book, "The Battle of Blue Licks," there is an historical reference that describes the area as "a desert, covered with a pavement of rocks and stripped of herbage." Numerous bison were attracted to the area because of the Blue Licks salt spring and their trampling and grazing caused the "desert-like" condition (the bison trace can still be seen within the preserve). It is likely that Short's goldenrod was one of the few plants that could persist in such severe conditions.

To determine if these management efforts have been effective, commission biologists implemented a goldenrod monitoring project. It currently monitors two management units that have been treated in a similar manner to the unit where volunteers have been working. On the two monitored units there are stem count increases of 65 percent and 567 percent, respectively. The project, funded by a grant from the U.S. Fish and Wildlife Service's Cooperative Endangered Species Conservation Fund, involves a lot of hard, tedious work that is often done under difficult conditions, and it seems to be paying off.

Fall is the perfect time to see this for yourself. Short's goldenrod is in bloom from late August until the first frost. Visit Blue Licks Battlefield State Park and walk the bison trace, where the goldenrod is growing along its edges.

For more than 200 years Kentucky's original landscape and native plant and animal species have suffered great losses. It can never be restored back to what it was before settlement and development occurred, but thanks to dedicated volunteers and KSNPC employees, some important examples of our natural heritage will always be with us.



TOP LEFT: This clump of soil includes an ample amount of crumb rubber used to improve turf durability. **LEFT:** A top-dressing of crumb rubber is applied at the Boyle County High School athletic field. **ABOVE:** Crumb rubber will help to reduce falling injuries due to its cushioning surface at this Oak Hill Elementary School playground in Pulaski County. Photos provided by Todd McCoy

Tire recycling projects roll on

By **Todd McCoy**
Division of Waste Management

As part of the Environmental and Public Protection Cabinet's ongoing initiative to turn the environmental liability of waste tires into economic opportunities, the Waste Tire Grant Program is in full swing. Currently the program has 11 projects under development that are recycling tires in communities throughout the Commonwealth. Ten more projects are scheduled for this fall. Projects include an experimental highway median barrier, as well as crumb rubber applications to playgrounds and athletic fields.

The Transportation Cabinet will test an experimental highway median barrier that employs a system of interlaced tires to form a protective wall between opposing lanes of traffic on divided highways. The goal of this project is to reduce the incident of cross-median collisions. The shock absorption characteristics inherent to tires may make them suitable building blocks for this wall. This testing is necessary to determine if the barrier meets the federal crash test safety requirements for highway usage.

In the four playground projects,

"crumb rubber," which is finely ground rubber from old tires, is being used as the primary playing surface to reduce the risk of falling injuries. It is colored either red, green or brown to enhance its aesthetic appeal and poured in four- to six-inch layers to form a thick cushioning surface.

The remaining projects involve top-dressing high-school athletic fields with crumb rubber. When spread over a field, the crumb rubber will sink into the topsoil to improve turf durability and soften the playing surface. This process can reduce field reseeding and maintenance costs by as much as \$3 per square foot per year. Some schools have reported a reduced incident of player injuries as a result of using crumb rubber. The cabinet will be collecting data on injuries, as well as other performance parameters, to determine the long-term benefits and cost savings of these projects.

As part of the grant agreement, each school will integrate this project into its fall curriculum to educate students on the serious environmental threat from waste tires and how recycling can eliminate that threat and benefit their community.

The program's implementation has exceeded the cabinet's expectations. Grant

recipients have worked hard to match the project cost by 25 percent by involving local fundraising organizations and seeking funding from local businesses.

This recycling project is truly a win-win situation by taking an environmental liability such as waste tires and turning it into an economic opportunity that benefits local communities in a practical way.

For more information, contact Todd McCoy at (502) 564-6717 or by e-mail Todd.McCoy@ky.gov



PROJECT AND GRANT AMOUNTS

Transportation Cabinet—\$45,720.

Playgrounds: Greenville—\$16,090; Williamsburg—\$39,706; Pulaski County—\$45,000; Rowan County—\$38,025; and Todd County—\$54,835.

Athletic fields: Danville—\$16,875; Lexington—\$52,125; and the counties of Ballard \$35,625; Boyle \$47,625; Estill \$46,875; Graves \$33,750; Harrison \$59,963; Madison \$146,566; Mason—\$33,750; Mercer—\$16,875; Nelson—\$34,875; Scott—\$51,375; Simpson—\$56,625; Taylor—\$45,500; and Woodford—\$61,500.

'Interim status' ending for LWD

By John Horne

Department for Environmental Protection



The owners of LWD will be required to properly close the facility in accordance with all applicable state and federal laws.

LWD in Calvert City is the last commercial hazardous waste incinerator in the United States still operating under interim status. However, that will change soon.

On July 20, 2004, the U.S. Bankruptcy Court for the Western District of Kentucky ruled in favor of the state Environmental and Public Protection Cabinet's motion to terminate interim status for the facility. The court issued its ruling after the facility's new owner, Bluegrass Incineration Services LLC, failed to meet deadlines under a cabinet agreed order with LWD aimed at bringing the facility into compliance and under a Resource Conservation and Recovery Act (RCRA) Part B permit, ending its interim status.

The owners of the facility will be required to properly close the facility in accordance with all applicable state and federal laws.

LWD began operation in 1969. Since Congress passed RCRA in 1976, the facility has been operating under "interim status" permit designation. Interim status was granted to facilities in operation before passage of RCRA, a measure that gave the U.S. Environmental Protection Agency authority to control hazardous waste.

The facility was allowed the condi-

tional opportunity to obtain an operating permit without shutting down operations. However, LWD has had a long history of environmental violations, including the failure to obtain a final RCRA Part B permit.

Lengthy legal action began in June 2003 when the cabinet published a Notice of Intent to Revoke the Interim Status designation for the LWD facility. Within the same month, LWD was put into bankruptcy court by its creditors.

On Oct. 22, 2003, the cabinet issued its final decision to terminate LWD's interim status. However, the bankruptcy court ruled that termination of interim status was subject to the automatic stay provision of the bankruptcy code. The court allowed LWD to continue operations, a decision the cabinet appealed.

After an auction date was set by the court, the cabinet and LWD negotiated an agreed order whereas Bluegrass Incinerator Services LLC had to meet strict deadlines including submittal of new permit applications, payment of past hazardous waste assessment fees, posting of additional financial assurance and proper removal and disposal of illegally stored hazardous waste and ash.

The order provided that by Sept. 30 interim status would no longer exist and a trial burn must be completed for the issuance of final air emissions and waste management permits. Bluegrass Incineration Services LLC failed to meet the deadlines required under the agreed order, which resulted in the cabinet filing motions seeking to find the company in violation and to immediately terminate the interim status designation for the facility.

After hearings earlier this year in May, June and July, the court issued the July 20 order finding Bluegrass Incineration Services LLC in violation and granting the cabinet's motion to terminate interim status. ❖

ABOVE and LEFT: Containers of hazardous waste located in the drum storage warehouse at the LWD incinerator facility. Photos provided by Gary Morgan, Division of Waste Management



Exhibit shows how to cut energy costs and live healthy

By Julie Smither and Greg Filburn
Division of Energy

Kentuckians enjoy the lowest energy rates in the nation. But now, more of our paychecks are going to higher gasoline, natural gas, propane and electricity costs.

There are more ways to save on energy costs than at the gas pump.

Just by caulking and adding insulation, Kentuckians can cut 20 percent off the average \$600 they pay every year to heat and cool their homes.

Also, energy efficient appliances and lighting can lower energy bills.

There are still many more things that can reduce energy costs. A “Healthy

Homes” exhibit at the 2004 Kentucky State Fair, coordinated by the Kentucky Division of Energy and the University of Kentucky (UK) Cooperative Extension Service, helped Kentuckians learn how to reduce their energy costs and make their living environment healthy.

A 12’ X 12’ home construction model showed how a home can be constructed to reduce energy costs. The model featured 70 energy-saving ideas—installing ventilation, rough-in wiring, insulation, ductwork and moisture barriers, weatherization, framing and heating and air conditioning.

“We’re just taking a very detailed approach to highlighting many features in the home where the owners can take direct control of their energy efficiency,” said Jerry Hash, UK extension housing associate. “You’re limiting environmental pollution by reducing the amount the power plant has to produce.”

ENERGY STAR products were also featured in the exhibit. ENERGY



ABOVE: ENERGY STAR products save energy and money. Many pay for themselves in a few short years.

LEFT: Always look for the ENERGY STAR label when purchasing appliances for your home. Division of Energy photos

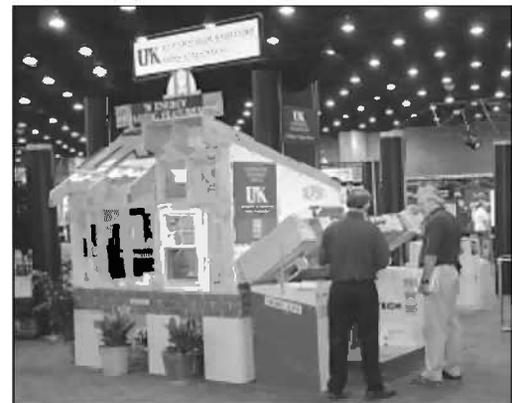


STAR is the federal government’s label to indicate that a product meets strict energy-efficiency standards. ENERGY STAR windows, lighting and appliances were a featured part of the exhibit.

Other important aspects of the Healthy Home were coordinated by UK Family and Consumer Sciences (FCS) specialists and agents in the Cooperative Extension Service. FCS also offered visitors helpful information on asthma and allergy triggers, disaster and emergency preparation as well as mold and moisture.

“Healthy homes need healthy people,” said Connie Wheeler, extension associate for family and consumer sciences coordinator. “We want people to learn the benefits of even moderate exercise and how to make physical activity a part of your daily routine.”

FCS also handed out cards to state fair visitors containing information on more than 50 topics. They also passed out pledge cards for people to pledge not to smoke inside their home. Indoor smoke greatly reduces a home’s air quality and



The Healthy Homes exhibit featured 70 detailed ideas for saving energy. UK Cooperative Extension agents were on hand to share health tips along with advice about ENERGY STAR. Division of Energy photo

can pose health hazards for those living in the home.

The ENERGY STAR exhibit will be traveling across Kentucky this year, and you can review the schedule on the Kentucky Division of Energy Web site at www.energy.ky.gov. 

Tire Amnesty fall schedule announced

By Todd McCoy
Division of Waste Management

The statewide Waste Tire Amnesty Program is going strong. This program, established in 1998, is part of the Environmental and Public Protection Cabinet's (EPPC) ongoing efforts to rid Kentucky's landscape of waste tires. Kentuckians can drop off their unwanted tires at a location within their own county free of charge. The EPPC collects the tires and recycles them through "beneficial end use" markets to become products such as tire derived fuel (TDF) or crumb rubber. The program is funded by the Waste Tire Trust Fund, which receives one dollar from the sale of every new tire purchased in the state. This fund is dedicated to managing waste tires and developing sustainable markets for recycled tire products.

The amnesty program just completed its spring collection, which recovered approximately 889,000 tires from 23 counties in the Bluegrass, Purchase and Pennyriple regions (Bell, Boone, Bullitt, Campbell, Carroll, Clay, Gallatin, Grant, Harlan, Henry, Jackson, Jefferson, Kenton, Knox, Laurel, Oldham, Owen, Pendleton, Rockcastle, Shelby, Spencer, Trimble and Whitley).

This second statewide amnesty program is averaging roughly 25 percent fewer tires recovered than the first program, which started in 1999 and concluded in 2002. With increased participation and local coordination of this second program, this 25 percent reduction is a good indicator that the number of waste tires being illegally held is declining. The amnesty program also identifies and remediates stockpiles of illegally disposed tires. Implementation of the program has virtually eliminated all known stockpiles. The cabinet, however, continues to search diligently for any that may remain. The 2004 Tire Amnesty will visit a total of 23 counties within the Barren River, Big Sandy and Kentucky River area development districts this fall. The dates in October and November are highlighted in the shaded box.

For more information about participation requirements, tire size restrictions and specific locations, contact Todd McCoy at (502) 564-6717 or Todd.McCoy@ky.gov

Big Sandy/Kentucky River

Perry – Oct. 14-16
Leslie – Oct. 21-23
Owsley – Oct. 28-30
Lee – Nov. 4-6
Wolfe – Nov. 11-13

Barren River

Hart – Oct. 14-16
Metcalfe – Oct. 21-23
Monroe – Oct. 28-30

Roundtable hears success stories, discusses problems

By Lajuanda Haight-Maybriar
Division of Water

What are we doing to protect our watersheds? What is working? What is not? Discussing the answers to these questions brought together 200 citizens and citizen-group members including federal, state and local government officials and staff, and business and industry representatives at the 2004 Kentucky Watershed Roundtable in Lexington in July.

These stakeholders came from across the Commonwealth, representing each of the seven major river basin groupings within the state—Big and Little Sandy, Four Rivers (Jackson Purchase area), Green-Tradewater, Kentucky, Licking and nearby Ohio tributaries, Salt and nearby Ohio tributaries and Upper Cumberland watersheds.

Participants of the roundtable heard local success stories that detailed how communities address wastewater issues and protect streams and groundwater by using Agricultural Water Quality Plans, funding programs available to Kentucky farmers and landowners, storm water training and outreach tools.

They also attend breakout sessions designed to communicate and discuss the concerns, issues and suggested solutions for their specific watershed.

A post-roundtable workshop entitled, "Floodplain Management and Community Liability: Seeking a Common Sense Approach to Watershed Protection" was also held, and many roundtable attendees stayed to participate and share their ideas.

Environmental and Public Protection Cabinet (EPPC) Secretary LaJuana S. Wilcher presented the keynote address and spoke of her support for watershed management, citizen participation and volunteer monitoring programs.

The roundtable was organized by the Kentucky Waterways Alliance, the EPPC, a multiagency planning committee and various sponsors and contributors.



These waste tires were collected during the 2003 Waste Tire Amnesty Program
Photo by Todd McCoy

Energy Managers

By Julie Smither
Division of Energy



Energy Savings Performance Contracting

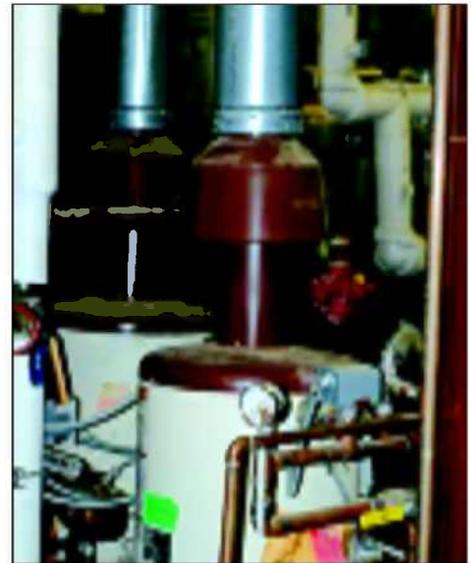
Effinger and Noel are assisting schools with energy savings performance contracts in which an energy services company identifies repairs and upgrades that will help schools improve energy usage. The upgrades are paid from the savings generated. Muhlenberg County's completed performance contract has resulted in more than \$100,000 saved in energy costs annually, which will pay for new air conditioning and controls.

Effinger is in the process of selecting an energy service company that will evaluate buildings in the Fayette County district and provide recommendations on improving their energy efficiency. He

In its efforts to help Kentucky schools reduce their energy costs and improve their indoor environments, the Kentucky Division of Energy (KDOE) secured grant funding for two energy managers, one for the Fayette County School District and one within the Department of Education for all Kentucky schools.

The primary goal for Chuck Effinger, energy manager for the Fayette County School District, is to reduce energy usage by 25 percent over the next five years. In 2003, the district spent more than \$5.6 million. Effinger created a database that looks at the energy use per building, so those wasting the most energy can be targeted.

John Noel, energy manager for the Kentucky Department of Education, wants to reduce Kentucky schools' annual energy bills of \$107 million. "We're beginning with a pilot project focusing on 10 school districts," he said. "We're looking first at improvements that have no cost, such as turning off lights, shutting down computers and adjusting temperatures for after hours." He's currently working with schools in Boyd, Daviess, Jessamine, McCracken, Muhlenberg and Pike counties. In August, Noel began training maintenance and data managers in these schools to use a Web-based program that tracks their utility costs and compares them from year to year and building to building.



ABOVE: High-performance design of new school buildings can decrease energy consumption, provide a better learning environment and promote energy efficiency by integrating energy awareness into the curriculum.

ABOVE RIGHT: Proper temperature setting and insulation of hot water heaters will save hundreds of dollars annually in utility costs.

UPPER FAR RIGHT (opposite page): Motors can be major consumers of energy in a facility. Proper sizing and maintenance can assure maximum efficiency of the system.

BOTTOM LEFT TO RIGHT: Controls: Digital controls are a vital part of an effective energy management program. They automatically control a wide range of activities including temperature control, system setbacks and air quality monitoring. Ductwork: Proper insulation and sealing of HVAC ductwork can prevent a substantial amount of energy waste. Inspecting: Regularly scheduled inspections and maintenance of equipment is an important part of an energy management program. Division of Energy photos



helping Kentucky schools reduce energy costs

anticipates that there will be many savings opportunities in lighting upgrades, energy management systems and gas-fired appliances. Architectural and construction features, such as windows and insulation, will also be evaluated.

Change is not always easy

“Our biggest challenge is getting the school administrators and staff to understand why improving energy efficiency is important,” Effinger said. “Our rates have always been low, and it just hasn’t been a priority.” He is helping them understand that wasted money can be used for classroom expenses. “The recent increases in Kentucky Utilities rates will add an additional \$356,000 to our electric bill, and those additional costs will have to be paid from general funds that support teachers and students,” he said. “If we can help lower that impact with an energy management program, everyone in the district benefits.”

Effinger is rolling out an awareness campaign this fall that will include a video developed by Paul Lawrence Dunbar High

School students. It will be a newscast format that discusses how people can save energy at school and at home. It will be broadcast over a local cable channel for students, teachers and the public.

Noel thinks his biggest challenge is trying to keep school facility directors motivated. “To improve participation, some school administrators have asked me to develop energy management policies that they can then ask their facilities management people to follow,” he said.

The Kentucky National Energy Education Development Program (NEED) works with each of the pilot schools to train teachers and provide curriculum to promote an energy conscious and educated society.

High performance schools

In addition to reducing energy expenses, the energy managers provide input on new school design, including such high-performance features as increasing day lighting and building materials that provide better indoor air quality.

In the past two years, KDOE has sponsored two high-performance school buildings workshops that were attended by more than 260 architects, engineers and school district representatives. These workshops provided examples of the best high-performance designs for schools around the country. These features are now being incorporated into new and

renovated school buildings in Kentucky. Kentucky’s first high-performance schools are in the design phase and will be located in Kenton County.

The future is bright

Overall energy awareness throughout Kentucky’s schools is growing, partly due to Noel’s position within the KDOE. As schools complete their energy savings performance contract projects and cost savings are publicized, more schools will jump on the bandwagon.

“If our pilot program is a success, we want to add another 10-15 districts into the program,” said Noel. State school officials in Arkansas are studying Kentucky’s program to assist them in the development of a similar program. “I’ve also had opportunities to work with architects in new construction, looking at energy efficient designs,” he added.

KDOE is also working with Jefferson County Public Schools to help fund two energy managers. The district spends nearly \$14 million a year in utility costs, and both the director of facilities and the school superintendent recognize the importance of energy management.

“It takes the involvement of everyone in the schools to make a successful program,” said Effinger. “It’s a total team effort and everybody wins when energy costs are reduced, and the savings can be directed to educational programs.”

For more information on energy efficiency, see the Division of Energy’s Web site at www.energy.ky.gov



Governor's plan offers relief

Lack of funding slows UST cleanup

By Robert Daniell
Division of Waste
Management

Many underground storage tank (UST) owners are experiencing difficulty in removing or cleaning up releases from their tanks. This is not due to a lack of excavation equipment or difficulty finding experienced contractors. The problem is lack of available funding for the reimbursement of cleanup costs from the Petroleum Storage Tank Environmental Assurance Fund (PSTEAF).

The fund was created in 1991 after the Kentucky General Assembly passed a measure authorizing collection of a Petroleum Environmental Assurance Fee—\$0.014 assessed on each gallon of gasoline and special fuels imported into the state—to assist UST owners with the cost of cleaning up releases from both active and removed tanks. The fee generates nearly \$44 million per year.

While it is hard to imagine how a fund generating \$44 million can be financially strapped, there is a primary reason for the current situation—the diversion of funding from its intended purpose. Budgetary shortfalls across state government have brought about the need to use significant portions of this funding for other state purposes.

For the first time since the establishment of the PSTEAF, there is no money to reimburse tank owners. This has resulted in a near stoppage of UST removals and cleanup work because many of the tank owners across the state cannot pay the high cost of cleanup. Cleanup contractors will not incur costs without assurance that they will be compensated. That assurance comes from the financial viability of the PSTEAF.

Maintaining the financial strength of the fund and moving forward with UST cleanup efforts is critically important to the protection of public health. Groundwater contamination can pollute drinking water supplies through releases of petroleum products including gasoline, diesel



A waste oil tank and heating oil tank were removed from A-1 Chevron #1105 in Bardstown last June. Cabinet photo

fuel, waste oil and kerosene. Without this reimbursement, work stops and contamination remains in the ground where it can spread and cause serious problems.

Governor Ernie Fletcher in his Public Services Continuation Plan has provided much needed relief. In this plan, the PSTEAF has been appropriated \$28.5 million for the 2005 fiscal year that began July 1, 2004, and ends June 30, 2005. Just recently in August, \$4.7 million was distributed to UST owners.

Since funding was limited for a few months, there is a backlog of reimbursements that will take several months to address. Current and ongoing tank removal and cleanup work will likely be delayed until this backlog is addressed and short-term reimbursements can be reinstated.

While Governor Fletcher has provided financial viability in his spending plan, the ultimate fate of the PSTEAF is tied to passage of a state budget by the legislature. It is critical that legislators understand the importance of this fund and provide budget appropriations that allow continued and meaningful reimbursement capabilities for the PSTEAF. Otherwise, the troubled times for tank owners will continue and the harmful effects of petroleum releases on human health and the environment may go unabated.

For more information contact Robert Daniell at (502) 564-5981 or by e-mail at Robert.Daniell@ky.gov. The PSTEAF Web site is <http://www.waste.ky.gov/programs/ust/PSTEAF.htm>



Federal UST program celebrates 20 years

This year marks the 20th anniversary of the federal Underground Storage Tanks program.

In 1983, the CBS program "60 Minutes" aired a story called "Check the Water," that brought national attention to families suffering from the effects of gasoline leaking from underground storage tanks from gas stations and other places.

Less than a year later, on Nov. 8, 1984, President Ronald Reagan signed into law legislation designed to protect the public from these petroleum releases.

In the last 20 years, more than 1.5 million old, unsafe tanks have closed nationwide, and almost 300,000 petroleum leaks have been cleaned up. Nearly all underground tanks have been upgraded or replaced and newly discovered leaks have dropped dramatically from a high of more than 66,000 in 1990 to roughly 12,000 last year.

In Kentucky, 35,131 old, unsafe tanks have been closed, and 10,242 leaks have been cleaned up. Nearly all active underground tanks have been upgraded or replaced and newly discovered leaks have dropped dramatically from a high of 1,798 in 1999 to 420 last year.

After more than a decade of scrutiny of its management of canisters storing spent uranium, the U.S. Department of Energy (DOE) broke ground on July 27, 2004, for a Paducah facility that will convert the material to a more stable chemical form. The DOE is responsible for more than 36,000 cylinders containing depleted uranium hexafluoride, or DUF_6 , stored outdoors at the Paducah Gaseous Diffusion Plant. The material is a legacy of the uranium enrichment that has taken place at the plant since the early 1950s. Laid end to end, the steel cylinders would stretch approximately 80 miles.

By the 1990s, Kentucky officials joined their counterparts in Ohio and Tennessee (where gaseous diffusion plants also operate) in raising concerns about the deteriorating condition of the cylinders and the potential environmental and safety risks associated with a release of cylinder contents. The Defense Nuclear Facilities Safety Board issued a recommendation calling for improved storage and maintenance of the cylinders. As a result of such attention, the DOE recognized the need to plan for long-term management of the cylinders.

In 1998, U.S. Sen. Mitch McConnell

begin construction of conversion facilities at both sites by July 31, 2004.

McConnell was joined by U.S. Sen. Jim Bunning and U.S. Rep. Ed Whitfield at the groundbreaking ceremony for the facility. McConnell said that his colleagues were instrumental in the swift passage of legislation that ensured the plans for the Paducah conversion facility.

The new facility will convert the DUF_6 to depleted uranium oxides (primarily triuranium octaoxide, U_3O_8) and commercial-grade hydrofluoric acid (HF). The facility will also have a backup system to neutralize the hydrofluoric acid to calcium fluoride (CaF_2), also a potentially marketable product, if the acid is not sold. The DOE expects to ship the uranium oxide to a facility licensed to dispose of low-level radioactive waste.

“The completed DUF_6 facility will be a great advance forward in cleanup at the Paducah DOE site. Processing the byproduct materials which have been stored in these 36,000 aging cylinders will greatly reduce the risk of potential environmental harm,” said Tim Thomas, assistant to the commissioner of the Department for Environmental Protection. “The department is especially appreciative of the efforts of Sen. McConnell in helping with the continuing cleanup at Paducah. His involvement has been pivotal.”

The conversion facility is located just south of the enrichment plant. Conversion of Paducah’s inventory of DUF_6 is expected to take 25 years and create at least 150 operational jobs and 100 construction jobs. Construction is estimated to take two years.

In October 2003, the Kentucky Natural Resources and Environmental Protection Cabinet (now the Environmental and Public Protection Cabinet) signed an agreement with the DOE that formalizes DOE’s cylinder management responsibilities and outlines specific requirements for inspections and measures to be taken for cylinders found in unacceptable condition.

Ohio and Tennessee signed similar cylinder management agreements with the DOE in the late 1990s.

Construction begins on uranium conversion facility

By Lauren McDonald
Division of Waste Management



Site preparation work is ongoing at the Depleted Uranium Hexafluoride (DUF_6) conversion facility construction project at the Paducah Gaseous Diffusion Plant. The concrete ditch (at the right of the photo) is the construction of the stormwater sedimentation pond at the conversion facility. Photo by Gaye Brewer, Division of Waste Management

The cylinders are stored on the ground in gravel yards or on concrete pads. The DOE allowed the depleted uranium to accumulate in hopes that the material could be reused for defense applications or other economically viable purposes. Over time, a stockpile of 484,000 tons accumulated, and after decades of exposure to the elements, many cylinders showed signs of rust and corrosion.

sponsored legislation requiring the DOE to submit plans for the construction of conversion facilities at its Portsmouth, Ohio and Paducah gaseous diffusion plants. In 2002, after the DOE delayed awarding the contract to construct the conversion facilities and suggested it was considering building only one facility, McConnell inserted language in a supplemental spending bill requiring the DOE to





Partnerships in protection

By Heather Housman
Kentucky State Nature Preserves Commission



The Landowner Incentive Program (LIP) is a federal program funded through the U.S. Fish and Wildlife Service (USFWS) and administered by state wildlife agencies throughout the country. Realizing that protection of rare species required cooperation of private landowners, the USFWS developed a nonregulatory opportunity for landowners to participate in protecting and enhancing habitat for plants and animals considered threatened and endangered. In most instances, landowners are able to continue

using their land while simultaneously improving the habitat for rare species. This program also provides an opportunity for private landowners to participate in and learn about the natural heritage of Kentucky and contribute to its recovery.

LIP funds are distributed as grants to states on a competitive basis, and only state agencies with primary responsibility for fish and wildlife are allowed to apply. The Kentucky Department of Fish and Wildlife Resources (KDFWR) partnered with the Kentucky State Nature Preserves

Commission (KSNPC) and the Kentucky Chapter of The Nature Conservancy (TNC) and consequently was awarded a LIP grant of \$1,495,000.

Kentucky is fortunate to have such a successful collaboration with a federal agency. This partnership provides a means for the federal grant money to be implemented in a local way. Some of the financial benefits to the state include hiring additional biologists, including a full-time botanist at the KSNPC to coordinate plant projects and a crew to do the work. The LIP program also provides funding and incentives to participating landowners.

The Kentucky LIP has a hard-working seasonal crew to implement LIP practices. This crew works most of the year on plans proposed by staff biologists on approved projects. Some of the activities include conducting prescribed burns, applying herbicides to control invasive exotic plants, operating seed drills for prairie restoration projects, hand pulling weeds around rare plants in sensitive areas and planting trees.

The KSNPC currently has ten projects underway targeting nine rare species. Management includes work on more than 200 acres across the state in five counties.

One of the LIP projects completed this year protects Short's goldenrod, one of Kentucky's few near-endemics and one that is listed as both federal and state endangered. (See *Volunteers and staff help one of Kentucky's rarest plants* on Page 1).

This particular Short's goldenrod project is on a privately owned tract of land in Fleming County. To improve the habitat for the plant, LIP crew members conducted a prescribed burn and removed some of the densely growing cedars on the tract in April. The low-intensity fire removed the leaf litter from the previous fall and killed small saplings, creating a more open forest and improved habitat for the goldenrod.

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TOP: A LIP crew member cuts marked cedars in Bullitt County.

ABOVE LEFT: Crew members conduct a prescribed burn to improve the growing habitat for rare plant species. KSNPC photos



LEFT: The cameras' ball turret, mounted beneath the helicopter, records photographs on a reconnaissance mission near Middlesboro. **ABOVE:** The videographer station controls both cameras by remote control, which provides a safer ride for the crew members. **BELOW:** The Bell Long Ranger. Photos provided by the Division of Mine Reclamation and Enforcement

High-tech cameras aid in cabinet's enforcement capabilities

By J. Hamon
Department for Natural Resources

Gone are the days of blurred photos and bad head colds. The Kentucky Environmental and Public Protection Cabinet's team of aerial photographers now enjoy the use of a new "gyro-stabilized" camera system that was recently purchased with state and federal funds.

The upgraded photogrammetry system is used during aerial reconnaissance of mine sites throughout the state.

The Bell Long Ranger helicopter, used by the Division of Mine Reclamation and Enforcement (DMRE), was purchased in 1988 as a result of a court settlement stemming from allegations of problems with the cabinet's enforcement of the Surface Mining Control and Reclamation Act of 1977. It is used for inspections of mine sites.

Aerial reconnaissance of mine sites has been utilized extensively during the past 16 years to help enforce and document that the regulatory authorities perform their duties.

During that time, the reclamation inspectors had to fly with the windows

open or the doors off to photograph "side-view" images of the mine sites from the helicopter. A bungee cord attached the video camera to the helicopter and provided stabilization. The old method of bungee cords for support have produced useable, though sometime shaky imagery, and several bad head colds for the flight crew after spending hours in the winter weather with the windows open. Another downside was that the hand-held system allowed only a side view or oblique of the mine from the helicopter.

The new camera turret mounts under the nose of the helicopter and holds two cameras inside, a digital video camera and a digital still camera. Both cameras are remote controlled, which eliminates flying without the doors and increases the safety for the crew. Two Global Positioning System (GPS) antennas are utilized. One sends information to an encoder that allows the GPS coordinates to be fed to the video tape recorder. The second provides coordinates to the airborne laptop computer that encodes the latitude and longitude on each image.



The imagery from the digital still camera is being used to build a new layer for the Geographic Information System (GIS). The new vertical images will provide permit reviewers with a current view of each mining operation, and they are automatically geo-referenced with the GPS coordinates recorded on each image.

Knowing the exact location of each aerial photograph provides supportive evidence of any point of mining violations. One example was a recent flight up the Tug Fork River into West Virginia to chase a "black water" plume and generate maps of the pollution sources. The GIS system was used to create printed information for concerned citizens and regulatory agencies based on the division's investigation.

Over the years the helicopter overflight program has become an

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Happy Birthday Smokey

By Gwen Holt
Division of Forestry



Smokey Bear celebrated his 60th birthday on Aug. 9, 2004. Smokey Bear has worked for six decades to remind Americans of the importance of outdoor fire safety and wildfire prevention. With reports of devastating wildfires increasing, Smokey Bear's wildfire prevention message is more vital today than ever before.

Smokey Bear is based upon an actual baby black bear that was found alone and badly burned following a devastating wildfire in the Capitan Mountains of New Mexico. He had taken refuge in a tree, which saved his life, but still received burns on his paws and hind legs. Soldiers and rangers battling the fire rescued the little cub. He was nursed back to health by the New Mexico Department of Game and Fish and was then sent to Washington, D.C., where he found a home at the National Zoo, becoming the living symbol of Smokey Bear.

The Smokey Bear campaign, created in 1944, is the longest running public service campaign in U.S. history. Smokey is the second most recognized national icon behind Santa Claus.

Smokey's forest fire prevention message, "Only You Can Prevent Forest Fires" remained unchanged for 50 years until April 2001 when the Ad Council updated his message to address the increasing number of wildfires in the nation's wildlands. His motto is now "Only You Can Prevent Wildfires."

As one of the world's most recognizable fictional characters, Smokey's image is protected by U.S. federal law and is administered by the USDA Forest Service, the National Association of State Foresters and the Ad Council.

For more information about Smokey Bear, visit the official Smokey Bear Web site at www.smokeybear.com.



Partnerships in protection

Continued from Page 13

Another example of an ongoing LIP project involves a plant that until recently was believed to be wiped out in Kentucky. Spoonleaf sundew, a very small carnivorous plant that traps and ingests insects, was discovered by KSNPC biologists last year in a farmer's pasture in Russell County.

LIP funds have been appropriated to reimburse the farm owner for the construction of a fence to protect the plant from all-terrain vehicle traffic. In addition to the fencing, the plan also controls any invasive exotic plants that will overtop the diminutive sundew if not removed.

This alliance of two state agencies and a nonprofit, nongovernmental organization to implement a federal program is a unique opportunity to protect some of Kentucky's natural heritage and improve the quality of our environment. The Landowner Incentive Program is certain to improve the future of Kentucky's rare species.



Kentucky volunteers battle blazes out west

Continued from Page 2

also identified all structures in the path of the fire. "Mapping on foot was very difficult because there were so many miles of fireline and the thick tundra made the walk feel a lot like walking in two feet of snow. The first day I walked five miles—it felt more like 10," he said.

Wilburn was later reassigned to another fire location that was threatening a small village on the Yukon River near the Artic Circle. He traveled seven miles up river by boat to reach a fire camp located on a large sandbar. The remoteness of the camp presented a challenge for storing food supplies. Food was flown in and dropped near the camp, then buried in holes in the frozen tundra to keep it fresh. "I have fought fires in Florida, Idaho, Utah, Oregon, Montana, California and several other states, but for most firefighters Alaska is the 'crown jewel' for wildfire assignments. It truly is the last

frontier," said Wilburn.

Jeff Smith, a forest ranger technician, was assigned for 14 days to Eagle, Alaska, supervising multiple resources such as engine and dozer crews and fire crews. Smith said it took 12 hours by bus on dirt roads to reach this very remote area. "Most of the homes in this area have sod roofs and do not have electricity or running water. The roads are closed for most of the winter, and the main mode of transportation is snowmobiles or dog sleds. It takes very special people to live in this remoteness and under these conditions." Smith said the fire burned more than 614,000 acres.

Pam Snyder, a forest stewardship program specialist, was assigned to a fire in Washington state near the town of Chelan. She was responsible for gathering and distributing the "intelligence of the fire," which included things like

weather, GIS mapping of fire boundaries, vegetation type, threatened structures, development of evacuation plans and daily action plans for the firefighters. "All of these factors help to determine a daily plan of action for the firefighters," said Snyder.

The team that Snyder worked with found out how important an evacuation plan really is. During Snyder's last two days at the fire camp, preparations were made to leave quickly because the fire's path shifted and was headed in the camp's direction. Luckily the fire shifted again and was no longer a threat.

When division employees volunteer for this dangerous but challenging opportunity they are placed on leave from the division and are paid by the U. S. Forest Service. Fourteen days plus travel time is the maximum length of time each employee or crew stays on assignment.



Indexing provides information on watershed assessments

By Susan Cohn
Division of Water

All water running off the land drains to a specific location—a creek, river or stream—and this drainage area is a watershed. Kentucky adopted the watershed management initiative where rivers, streams and lakes in a particular watershed unit are assessed by the Environmental and Public Protection Cabinet's Division of Water (DOW) and other cooperative agencies. Because of these cooperative efforts, more information on Kentucky's watersheds is now available than ever before.

Users of ArcView and Singlezone applications can access coverages by looking under Portal Data and Tools and selecting DOW layers. Coverages are available by basin and by use within each basin. Color schemes show green for fully supporting a use; yellow for partial support; pink for threatened use; and red for failure to support a designated use.

Use categories include Drinking Water, Aquatic Life, Primary (Secondary for lakes), Contact Recreation, Fish Consumption and Overall Use. After selecting a coverage, you may view the data table and the assessment data associated with it.

Kentucky has just completed the process of assessing and indexing all of the state's streams for the first five-year cycle of the watershed management initiative.

The DOW used a computer application, referred to as a "reach indexing tool," that enables users to select a specific "reach" of a stream or many reaches in a basin, and assign data to that specific location. This tool also allows the division to make "coverages" (graphic data layers created in ArcView that illustrate assessed information) to overlay when looking at stream use or to create maps that can be made into PDF (portable document format) files and posted on the Internet for the public to view.

Maps, currently displayed on the DOW's Web page, illustrate location information and coverages for particular watersheds at <http://www.water.ky.gov/sw/swmonitor/305b/305b+Reports.htm>. Also visit <http://www.water.ky.gov/sw/swmonitor/> for additional information on the monitoring process. The state's Water Quality Report to Congress link may be selected to either view the full report or to download

PDF files for a specific map. Adobe Acrobat Reader is required to view these PDF maps.



High-tech cameras aid in cabinet's enforcement capabilities

Continued from Page 14

essential part of the DMRE's efforts to protect the state's citizens and environment. This new camera system is a powerful tool that should greatly enhance the cabinet's ability to enforce Kentucky surface mining laws and regulations.

Routine aerial inspections allow:

- use of images as supporting evidence in enforcement actions.
- inspectors an aerial view of the mine and surrounding areas to detect adverse mining-related impacts that may go undetected from ground level.
- the Division of Permits to use the photographs in the review of new permit applications or revisions to existing mines.
- the public to use the overflight program as a tool for ensuring that mining and reclamation laws are enforced consistently.
- rapid response for monitoring environmental impact caused by coal mine-related issues.



Document provides guidance for using volunteer monitoring data

By Maleva Chamberlain
Division of Water

The Environmental and Public Protection Cabinet's Division of Water, along with the U.S. Environmental Protection Agency's Office of Water, encourages all citizens to learn about water resources. Both agencies also encourage volunteer monitoring to help build public awareness of pollution problems and to help identify and resolve pollution issues. The Division of Water (DOW) has supported volunteer monitor-

ing in Kentucky since 1985 through the Water Watch and Watershed Watch programs.

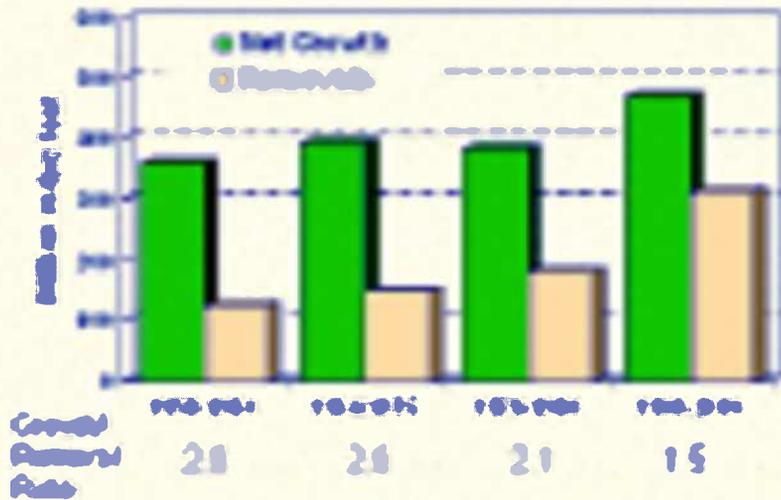
In an effort to make volunteer monitoring more effective, the DOW has released a document entitled, "Agency Guidance for Use of Volunteer Monitoring Data and Reports." The guidance document is meant to allow volunteer data to be used more extensively even, in some instances, as a sole source for certain determinations.

Voluntary monitoring data have historically been used as supplemental or supporting data for water quality determinations and decisions, but volunteer groups have always wanted to participate more fully in state water quality activities.

Training and specifications for collecting, verifying and submitting data are spelled out in protocols in the document. It can be viewed at <http://www.water.ky.gov>.



Average Annual Net Growth and Removals of Growing Stock Trees, Kentucky



Forest inventory and analysis report released

By Gwen Holt
Division of Forestry

Kentucky's forests are always changing. Today, there are 25.4 million acres of land in Kentucky, and 47 percent (11.9 million acres) is forestland.

On August 10, 2004, the U.S. Forest Service and the Kentucky Division of Forestry released the 2003 Forest Inventory and Analysis Report. The report compiles five years of aerial and on-the-ground inventory work.

"We have reached a milestone for forestry. That milestone is in the form of factual data about our forest resource at a time when there is debate on our forests' future," said LaJuana S. Wilcher, secretary of the Environmental and Public Protection Cabinet.

The report revealed that the number of total forestland acreage decreased nearly 769,000 acres in the last 15 years, which equates to a net loss of 3 percent of forestland statewide. The majority of loss occurred on privately owned forestland.

The loss of forestland is attributed to the conversion of the land to nonforest land use, such as urban development and mining.

The good news is that the quality of

We have reached a milestone for forestry. That milestone is in the form of factual data about our forest resource at a time when there is debate on our forests' future.

LaJuana S. Wilcher, Secretary
Environmental and Public Protection Cabinet.

the timber has improved due to larger trees, and there are more trees per acre than in 1988 when the last forest inventory was conducted. "We are still growing more trees than we are removing. The report shows that for every one tree removed there are 1.5 trees growing," said Leah W. MacSwords, director of the Division of

Forestry. "We have an adequate supply of forestland to meet the needs of Kentuckians. The solutions to maintaining and increasing Kentucky's forestland are simple—proper forest management, reducing wildfires and eliminating invasive, exotic plant species from our forests," said MacSwords.

"It has taken five years to gather these statistics. The field crewmembers that participated in gathering these data walked the sides and crests of Black and Pine mountains, the swamps of Obion Creek and the cliffs of the Red River Gorge, in the dead of winter, the heat of August, with mosquitoes, yellow jackets, ticks and snakes. They have been to every corner of Kentucky," said MacSwords.

Kentucky's forests have been periodically inventoried since 1949. The fieldwork for the 2003 inventory report began in 1999. This project has been in partnership with the U.S. Forest Service's Southern Research Station, and the field data was sent directly from field recorders all over Kentucky to the U.S. Forest Service database in Knoxville, Tenn.

For more information visit <http://www.forestry.ky.gov/news/Forest+Inventory+and+Analysis+Report.htm> or the U.S. Forest Service

Southern Research Station web site at <http://srsfia2.fs.fed.us/>

ABOVE: This chart shows the rate of growth and removal of trees in Kentucky from the 1950s to 2003.

BELOW: Kentucky field crewmembers. Division of Forestry photo and graph



Kentucky's mine mapping initiative

forging the way for mine safety

By Linda Potter
Department for Natural Resources

The creation of an innovative digital mapping project that promises to save the lives of Kentucky miners has put the state's coal mines in the national spotlight. The Kentucky Mine Mapping Initiative insures that every underground mine in Kentucky is located, digitized and online.

Since the mid-1800s, miners have extracted more than 8.5 billion tons of coal from the regions of eastern and western Kentucky. Underground mining was dominant until the 1950s when surface mining became more prevalent. To date, the Kentucky Office of Mine Safety and Licensing has confirmed more than 30,000 abandoned Kentucky mines.

Rising coal prices have translated into increased mining activity, often in areas adjacent to abandoned mines. Flooding and roof erosion resulting from new mining adjacent to these abandoned mines threaten 17,000 coal miners who work in these 540 active mines.

Two events demonstrate the urgent need for an accurate and accessible system showing Kentucky's underground voids. On Oct. 11, 2000, a coal slurry pond at Kentucky's Martin County Coal Co. began leaking into the abandoned mine below, creating a major environmental and safety hazard. A mining incident at the Quecreek Mine in Pennsylvania on July 24, 2002, trapped nine coal miners 240 feet underground for three days because of flooding from an adjacent abandoned mine. These disasters and the potential for others compelled Kentucky to develop a Geographic Information System (GIS) mine mapping system, which

débuted last October. The Mine Safety and Health Administration awarded a \$1 million grant to fund the program to digitize approximately 30,000 mine maps for 2003 and 2004. These maps, along with mine reports, will be scanned (color mapped), geo-referenced and made accessible by the Internet by October 2005.

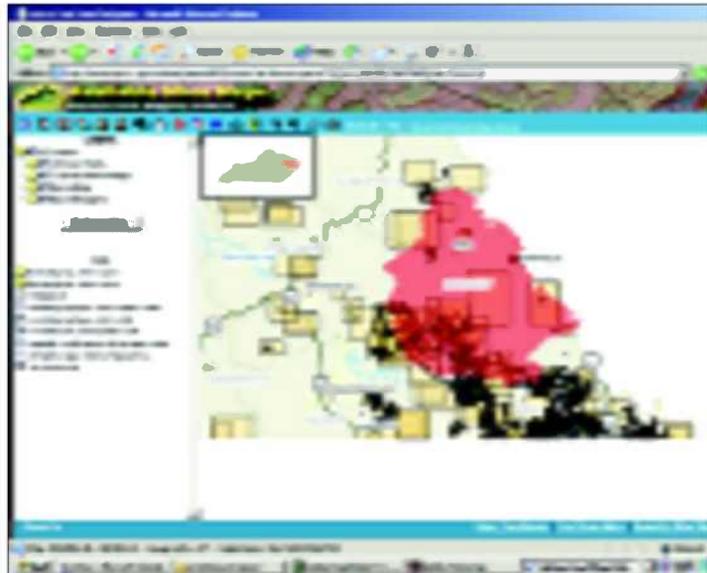
Private industries, as well as public agencies, are finding that the online maps offer many advantages. Before the initiative, coal companies had to submit

as many as five paper maps. Now only one annual map is required because state and federal agencies can access that map online.

Started as a mine safety endeavor, the online system is a valuable tool for property owners, utility companies, fuel exploration companies, the Kentucky Transportation Cabinet and potential investors. The Web site averages approximately 300,000 hits per month.

"It saves us time," said Pat Highly with Marshall Miller & Associates. "With this system we might spend an hour and a half (in the office) instead of a four-hour trip on the road to Frankfort. We can get a lot of information from the database online that I would otherwise have to come to Frankfort to get."

"I am real pleased with the quality of



An interactive mine map of Martin County and surrounding areas.

the downloads. It's fantastic what you can do with it. The fact that you don't have to make a trip to Frankfort will save lots of time and money. The biggest impact is that it will enable engineers and operators easy access to mine map information. A tremendous stride forward in safety," said Professional Engineer Rick Keene.

Today, the project is moving toward having accurate, publicly accessible information about all current and past coal mine development and mined-out areas. GIS-compatible images of engineering drawings and associated mining reports will soon be available online as well.

Although accidents and death in the coal fields can never be eliminated, this initiative takes great strides in preventing the devastation that occurred at the Martin County and Quecreek mines. For those miners who stay underground for hours every day, there is no sunlight, no gentle breeze – just darkness and the knowledge that the potential for disaster is always there. The Kentucky Mine Mapping Initiative is a vital project that adds critical information needed to save their lives.

For additional information, visit <http://minemaps.ky.gov>



Awards

Conservation districts hold 61st convention

By Martin Bess
Division of Conservation

The Kentucky Association of Conservation Districts (KACD) recently held its 61st Annual State Convention. KACD and Kentucky's conservation districts have been very active this past year dealing with numerous soil conservation and water quality issues facing Kentucky.

The convention brought together conservation district supervisors from across the state to discuss issues such as the Phase I Tobacco Settlement Funds, which are so important to the Kentucky Soil Erosion and Water Quality Cost Share Program.

Other educational opportunities included an update on farmland protection, environmental education, conservation district programs, PRIDE and watershed conservancy districts. The convention also honored the top two conservation districts in the state, as well as district supervisors for outstanding volunteer service and longevity. Recognition was also given to several educators, cooperators and other individuals for their service and dedication to the Commonwealth and to the challenge of promoting the preservation and wise use of its natural resources.

The following individuals were acknowledged for their conservation efforts during the convention:

KACD Conservation Person of the Year—Outgoing KACD President Pat Henderson—for his service to the association and conservation districts.
KACD 2004 Distinguished Service Award—Larry Cox—for being involved in conservation issues and willing to assist in handling conservation initiatives in the Commonwealth.

RIGHT: Pat Henderson (right) was presented with the Conservation Person of the Year award by Randy London.

Photos by the
Division of
Conservation



LEFT: Marvin and Rita Greenwell of Nelson County were awarded the Outstanding Conservation Cooperator Award by KACD President Patrick Henderson (center).

for students and people to appreciate the world around them is to spend time there.

KACD Outstanding Conservation Districts—

Barren County and Campbell County—for their activities, projects, on-the-ground accomplishments, and services to cooperators, residents and landowners.

Forestry Award—Floyd County Conservation District and the Eastern District Office of the Kentucky Division of Forestry.

Outstanding Junior Board Award—Carroll County Conservation District.

Soil Stewardship Award—Pendleton County Conservation District.

KACD Auxiliary Natural Resource Scholarship—Taylor Wallace, Christian County.

KACD Auxiliary George Crafton Scholarship—Lauren Omer, Union County.

Kentucky Envirothon—Fayette County 4-H Environmental Club.

Outstanding Conservation Cooperator Award—Marvin and Rita Greenwell, Nelson County, (state winner—awarded \$500); Danny and Judy Cunningham (state runner-up—awarded \$250).

Outstanding Conservation District Environmental Education—Calloway County Conservation District—for their educational activities, including Youth Ag Days and the Home and Farm Safety Day.
Elementary Conservation Teacher of the Year—Beverly McQueary, Taylor County Elementary in Campbellville—for involving her students in water testing, conservation poster contests and 4-H activities.
Secondary Education Conservation Teacher of the Year—Jamie Hester, Boyle County—who believes that the best way



Kentucky team has memorable final finish

By Martin Bess
Division of Conservation

Once again, the Fayette County 4-H Environmental Club from Lexington showed off their environmental knowledge by finishing fourth among 52 states and Canadian provinces that competed during the 17th annual Canon Envirothon.

The week-long North American environmental education competition was held at Wesleyan College in Buckhannon, W.Va.

More than 250 teenage challengers from high schools and other organizations came together to study and compete on environmental issues and resource conservation, and to receive Canon scholarships and prizes exceeding \$30,000.

The high school team from Florida received \$15,000 in Canon scholarships and photographic equipment for being the first-place champions. Virginia and New Jersey placed second and third, respectively.



The Fayette County 4-H Environmental Club members (left to right) Tara Franey, LeAundra Murray, Anna Truscynski, Josie Lamb and Beth Oleson. Division of Conservation photo

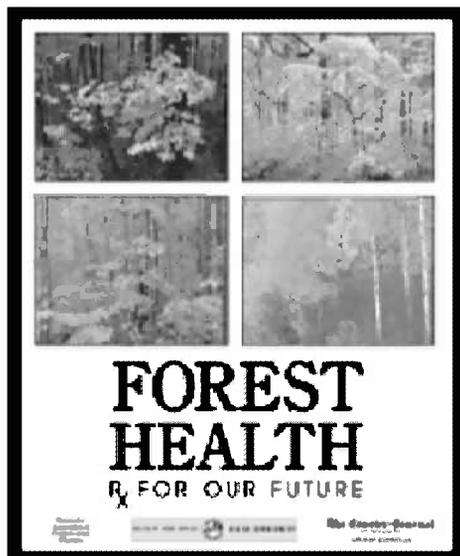
The team from Lexington qualified by winning the Kentucky Envirothon that was held last spring. The students were tested on their environmental knowledge for soils, aquatics, forestry, wildlife, and Natural Resource Management in Urban Environments. They have been competing in the Envirothon since their freshman year, finishing second in the state the first year and winning the next three state championships. All five

team members graduated from high school this year, making this the last year that they will compete in this program.

The 2005 Canon Envirothon competition will be held in Missouri.

For more information on the Canon Envirothon, contact Martin Bess, Division of Conservation, 663 Teton Trail, Frankfort, KY 40601, by e-mail martin.bess@ky.gov, or by phone (502) 564-3080. ❖

Forest health is theme of contests



How healthy is our forest? That's the question *The Courier-Journal* is asking children as they take part in the conservation writing contest and the Jim Claypool art contest. The contests teach students about forests resources—not just as a resource that simply renews itself, but also as a resource that faces many threats. The theme for the 2004 contests is “Forest Wellness, Rx (Prescription) for Our Future.” To view an online version visit www.courier-journal.com/education/forest2004

The conservation writing contest began in 1944, and the Jim Claypool art contest (named for the late director of the Kentucky Division of Conservation) began in 1973. First- through fifth-grade students are eligible to participate in the art contest, while students through grade 12 may show off their talents in the writing contest. Schools will select their top entries and submit them to the local conservation districts by Dec. 1, 2004.

The Courier-Journal, Kentucky Farm Bureau, Kentucky Association of Conservation Districts and Kentucky Division of Conservation sponsor the contests in cooperation with other state and federal agencies.

For more information, contact your local conservation district office, county Farm Bureau office or Kentucky Division of Conservation at (502) 564-3080. You may also contact martin.bess@ky.gov for details. ❖

Regional staff offer assistance to Kentucky small businesses

By Rose Marie Wilmoth
Compliance Assistance
Division

One of the things people rarely hear about is the assistance the regional offices offer small businesses throughout the Commonwealth. There are eight regional offices within the Division for Air Quality (DAQ) Field Operations Branch.



Kevin Flowers

“They are the first line of communication with facilities regulated by the division and the general public,” said Kevin Flowers, DAQ field operations branch manager. “They are the experts on the facilities within their regions.”

The DAQ’s primary goal is to protect public health by ensuring that facilities remain in compliance with air quality regulations. This goal is aided by providing compliance assistance to the regulated community.

With 18 years of experience as an environmental inspector and manager, Flowers believes that the air quality regulations are among the more complex that a business is required to implement. Frequently there are regulations for each piece of equipment and many different processes. Because air quality regulations are numerous, regional office staff frequently meet with facilities to review and discuss their permit requirements.

“The regional offices are an excellent source of information. Talk to them up front and let them know what is happening with your business,” Flowers said. “The last thing anyone from a regional office wants to find is a business in noncompliance.”

Frequently, after businesses receive their permit they think, “We’re good to go now,” said Pat Barker, supervisor of the Owensboro Regional Office. “Every permit holder should read their permit and make note of reporting requirements and renewal dates,” he said.

Facilities are required to submit an application to renew its permit six months or 180 days prior to the permit’s expiration date. Not complying can cause the facility to lose its authority to operate.

Facility personnel designated to complete or track permit requirements are strongly encouraged to record due dates on paper or electronic calendars and create “reminders” of the due dates. This will ensure that they remain in compliance with their permit conditions.

Staff in the DAQ regional offices are available to assist businesses in any way. “It is always better to call us for information or to discuss a problem than to hope something will go undiscovered,” said Bill Clark, supervisor of Paducah Regional Office.

One example of how DAQ provides compliance assistance to small businesses included helping American Speciality Cars find a discrepancy in its emission rates, resulting in a significant savings in air quality emission fees paid by the company.

To obtain assistance from any DAQ regional office, visit the DAQ Web site at <http://www.air.ky.gov>. For businesses with less than 100 employees, technical assistance is available free of charge from the Kentucky Business Environmental Assistance Program. For information call Greg Copley at (800) 562-2327. The Kentucky Pollution Prevention Center also assists businesses by identifying opportunities for pollution prevention. Call (502) 852-0965 to schedule a visit. 



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