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Spring 2004

Land Air & Water

Kentucky Environmental and Public Protection Cabinet

State of Kentucky
Ernie Fletcher, *Governor*

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

**Department for Environmental
Protection**
Lloyd R. Cress, *Commissioner*

Department for Natural Resources
Susan Carole Bush, *Commissioner*

Department of Public Protection
James L. Adams, *Commissioner*

Editor
Design & Production
Cindy Schafer

Co-editor
Kerry Holt

Agency Coordinators
Martin Bess, Malva Chamberlain,
Mary Jean Eddins, Matt Hackathorn,
Gwen Holt, Leslie Cole, Cecilia Mitchell,
Lee Ruggles, Julie Smither

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Combined cabinets bring new faces, challenges

By Kerry Holt
Office of Communications and Outreach

An executive order signed on Jan. 6, 2004, by Gov. Ernie Fletcher created the Environmental and Public Protection Cabinet (EPPC), which is a newly formed organization made from the combination of the former Natural Resources and Environmental Protection Cabinet, Labor Cabinet and Public Protection and Regulation Cabinet. Gov. Fletcher selected LaJuana S. Wilcher, of Bowling Green, to serve as EPPC secretary. "LaJuana will be an excellent addition to our cabinet because of her extensive background in environmental protection and protecting our country's natural resources," said Gov. Fletcher.

This new cabinet is now divided into four departments—the Department for Environmental Protection, Department for Natural Resources, Department of Public Protection and Department of Labor.

Lloyd Cress Sr., of Lexington, has been chosen to serve as the commissioner of the Department for Environmental Protection. Cress served as the general counsel for the Kentucky Water Pollution Control Commission before working as environmental counsel for Ashland Inc. Cress has also worked as assistant attorney general for the Commonwealth and as director of environmental affairs for the Kentucky Chamber of Commerce. (See *Cress is Kentucky's chief environmental regulator*, an interview with Lloyd Cress on Page 7).

Susan Carole Bush has been appointed commissioner of the Department for Natural Resources. Bush, a geologist, previously served with the Natural Resources and Environmental Protection Cabinet from 1980 to 1991. She most recently served as project manager for Third Rock Consultants, an environmental consulting group located in Lexington.

Due to the combining of three cabinets the EPPC now employs more than 3,000 people. While new programs and agencies have been added to the EPPC, the cabinet still promises to provide the same level of service as in years past. "The EPPC will promote the quality of life for all Kentuckians and contribute to the state's economy by protecting the environment, the citizens and working people throughout the Commonwealth," said Wilcher.



LaJuana S. Wilcher

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what's inside

Features

Land
Air & Water

Spring 2004
Volume 15 Number 2



Black water task force formed 1

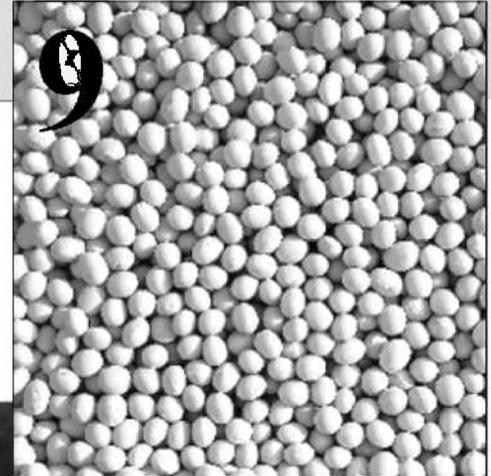
Cabinet launches preventative task force to analyze black water spills throughout Kentucky.

Common herbicide no longer found in city's drinking water 3

Marion, Kentucky, residents no longer fear Atrazine in their city's water supply sources

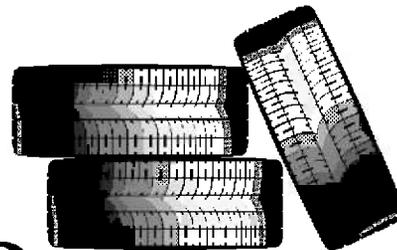
Biodiesel, an alternative fuel 9-10

The Kentucky Biodiesel Showcase promotes the use of soybeans as an alternative fuel source.



Contents

Combined cabinets bring new faces, challenges.....	Inside cover
Kentucky Energy Services Coalition—working to improve energy efficiency in government	2
Striking a balance between environmental protection and economic opportunity	4
Exotic pest is potential threat to Kentucky's ash trees	5
Capturing carbon—working to clean the air	6
Cress is Kentucky's chief environmental regulator	7
Training provides valuable service that will assist farmers	11
Free compliance services that assist Kentucky businesses	12
Reduced soil compaction essential to reforestation	13
The resurrection of Wilson Creek	14
Web site provides wealth of knowledge for all ages	15
GIS helps commission meet its mission	17
Connecting license plates with nature and conservation	18
Awards—Dedication to protecting Kentucky leads to awards ...	19
Spring brings new life and Earth Day	20
EPA agrees with Kentucky's ozone designations	Back cover



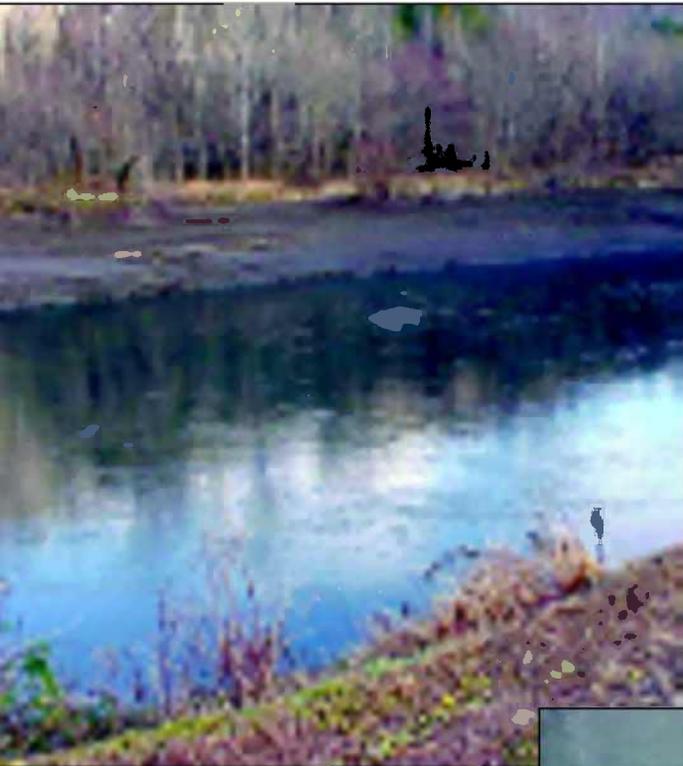
8 Round Two— Tire Amnesty vs. waste tires

On the Cover

Furrowed wakerobin (*Trillium sulcatum*) and marginal woodfern (*Dryopteris marginalis*) blanket the area below Dog Slaughter Falls near Cumberland Falls State Park. Photo by Thomas G Barnes, University of Kentucky, Department of Forestry.

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Rash of black water spills spawns new task force



By Kerry Holt
Office of Communications and Public Outreach

With the new year came a new call to action for the Environmental and Public Protection Cabinet (EPPC). Within a six-week period, 13 black water spills fouled miles of Kentucky's waterways and prompted the cabinet to launch a preventative task force to analyze the problem.

Black water spills can occur as a result of discharges from coal impoundments, sediment ponds, roads or other coal mining-related activities. The first spill was reported on Dec. 8 when heavy rains washed sediment from a coal road, releasing black water into the Levisa Fork of the Big Sandy River. A 12-mile plume of discharge eventually made its way to Fishtrap Lake in Pike County. In the following weeks, additional spills were reported in Floyd, Knott, Leslie and Martin counties, creating concern for citizens and state officials.

The latest spill was Jan. 28 when an overnight discharge blackened more than eight miles of Middle John's Creek in Pike County. The EPPC issued a Notice of Noncompliance and an Imminent Danger Cessation Order to the John's Creek Processing Co. for allowing black water to

leave a permitted area and for failing to timely report the spill.

In response to the black water discharges EPPC Secretary LaJuana Wilcher announced that leaders of environmental and coal organizations in Kentucky agreed to serve on a task force to address black water spills in the Commonwealth. "I am pleased that environmental and industry leaders recognize the adverse impact these spills have on water resources in Kentucky and want to work together to address our concerns," said Wilcher. "The Fletcher administration is committed to addressing

ABOVE LEFT: *Lick Creek in Pike County was affected when a black water spill occurred. The creek, as well as its banks, are black from the coal sediment.*

TOP: *A cloudy film of sludge covers the rocks in Lick Creek.*

LEFT: *A Coops of Engineers ranger tests the waters of Lick Creek.* Photos provided by Kentucky Emergency Management

issues that affect water quality, air quality and natural resources in the Commonwealth."

Wilcher invited the leaders to participate in the development of recommendations to reduce the frequency of the discharges and severity of the resulting pollution. The group is discussing resolutions to recent events and reviewing maps, which chart areas hardest hit by the blackwater discharges.



Task force participants

Ted McGinnis, Beech Fork Mining; Bill Caylor, Kentucky Coal Association; Don Bowles, Charolais Coal; Dr. Lindell Ormsbee, Kentucky Water Research Institute and Environmental Quality Commission; Judy Peterson, Kentucky Waterways Alliance; and Tom FitzGerald, Kentucky Resources Council.



Kentucky Energy Services Coalition— working to improve energy efficiency in government

By Julie Smither
Division of Energy

“Kentuckians deserve the most efficient and effective state government possible.” With those words, just days after taking office, Gov. Fletcher set the course for all state agencies to improve energy efficiency in their buildings.

In fiscal year 2003, Kentucky state government spent more than \$95 million in energy costs in government-owned buildings and postsecondary education facilities. That same year, energy costs for K-12 schools exceeded \$107 million. The Kentucky Division of Energy conservatively estimates that the state could save 10 to 15 percent, or around \$24 million in annual energy costs through energy management, including Energy Savings Performance Contracting.

Energy Savings Performance Contracting enables building owners to use future energy savings to pay for up-front costs of energy-saving projects, eliminating the need to dip into capital budgets. It offers a way to fund building upgrade and modernization projects through the savings generated from improved energy system performance. With shrinking capital budgets, increasing energy prices, and improved technologies—along with guaranteed savings offered by energy service companies—Energy Savings Performance Contracting plays an important role in improving energy efficiency throughout state government.



In Kentucky, Energy Savings Performance Contracting is promoted by the Kentucky Energy Services Coalition (KESC). The KESC is an extension of the Energy Services Coalition, a national nonprofit organization of private and public members promoting Energy Savings Performance Contracting throughout the United States. The KESC was formed in April 2001 to promote energy efficiency upgrades in state government and universities.

Enabling legislation for Energy Savings Performance Contracting was passed in 1996 and made provisions for K-12 and local governments to proceed with these projects. However, state agencies still met barriers that kept them from taking full advantage of this process. The KESC worked closely with the Division of Energy and the Finance and Administration Cabinet to revise Kentucky

statute to allow state agencies and universities to use Energy Savings Performance Contracting to reduce their energy costs.

The KESC also provides education and outreach. A workshop on Energy Savings Performance Contracting was held in September 2003 that attracted more than 80 attendees. As a result of this workshop, at least three state agencies were convinced that they should move forward with their Energy Saving Performance Contracts. The workshop also generated funds for the KESC to provide more of this kind of training.

Results of efforts by the KESC and Finance and Administration Cabinet staff have been significant. Since the change in the legislation in 2002, there have been ten requests for proposals released by state agencies. Of those, the Kentucky Community and Technical College System project has gone to contract while the others are in various stages of the process to reach a contract.

Continued on Page 16

ABOVE AND LEFT: These two state government buildings in the Cabinet for Human Resources complex in Frankfort are currently involved in an Energy Savings Performance Contracting project. Photos provided by the Division of Energy

Cleaning up Kentucky's drinking water one city at a time

By Janet James
Crittenden County Conservation District



Landowners for years have used herbicides in crystal form and sprays to rid their property and crops of aggravating weeds. Atrazine is a widely used chemical that controls the growth of broadleaf and grassy weeds, and it is estimated to have been the most heavily used herbicide in the United States in the late 80s.

In Marion, Ky., residents now have drinking water free of any detections of atrazine. That wasn't the case in 1999 when water tests for the city's water supply sources (the old City Lake

and Lake George) indicated high levels of atrazine. Officials reported levels of raw atrazine at 30 ppb (parts per billion), which greatly exceeded the U.S. Environmental Protection Agency's (EPA) maximum contaminant level of 3 ppb. Atrazine is known to be harmful to

humans if specific quantities are consumed.

The Crittenden County Conservation District set up a committee, including landowners within the City Lakes watershed area, conservation district representatives and the Natural Resources Conservation Service (NRCS), to review information concerning possible sources of the contaminants. Marion's city administrator

address the herbicide problem. The main component of the plan was to establish a cost share program for 133 landowners within the City Lake/Lake George watershed.

The district used Kentucky Soil Erosion and Water Quality Cost Share funds, which are administered by the Kentucky Division of Conservation and Department for Natural Resources, and channeled the funds into their own City Lakes cost share program.

The program offered incentive payments to landowners within the watershed to refrain from using herbicides containing atrazine on their cropland. Landowners could also receive cost share funds to install best management practices, such as filter strips, grassed waterways, cropland conversion and field boarders. These incentive payments were offered for setting aside cropland in the USDA's Conservation Reserve Program.

The atrazine problem has been addressed utilizing \$22,500 from 2001-03 on cropland conversion and the use of alternative chemicals, and this year money will be spent on a grass waterway in addition to the use of alternative chemicals. Because of this demand the conservation district has experienced more applicants than funds available.

As a result, no landowner applied atrazine in this watershed during 2001 or 2002. Monitoring reports have shown a decrease in the City Lakes water supply from 22 ppb in May of 2000 to the lowest reading of 0 ppb taken during April 2002.

According to Beverly Herrin, chairman of the Crittenden County Conservation District, the results have been impressive. She also states that the district supervisors are pleased with the program, the participation and most of all the atrazine-free drinking water for Marion residents.

The U.S. EPA and local conservation districts encourage people to learn more about their drinking water. Start by contacting local water suppliers to see what chemicals are tested for and how the water is treated.

To learn more about atrazine, visit the U.S. EPA Web site at www.epa.gov/safewater/dwh/c-soc/atrazine.html



Lake George contained high levels of atrazine in 1999. Today, it is considered atrazine free. Photos provided by the Crittenden County Conservation District

The program offered incentive payments to landowners within the watershed to refrain from using herbicides containing atrazine on their cropland.

also played a key role in providing valuable information and test results needed during the research process.

The Crittenden County Conservation District and the new committee developed a plan to



Striking a balance between environmental protection and economic opportunity

By Matt Hackathorn
Division of Waste Management

“As governor, I said I will do all I can to promote the revitalization of brownfield sites throughout the Commonwealth. As with Papa John’s Cardinal Stadium, brownfield sites have the potential to be transformed into flourishing economic machines that pour money back into the community and create hundreds of jobs,” said Gov. Ernie Fletcher

We’ve all heard the age-old business philosophy from one land baron or another persuading us to, “Buy land, it always appreciates! After all, they’re not making any more of it.” But what about the barren land—the abandoned industrial properties, old municipal dumps or former mining sites, where redevelopment is complicated by real or perceived environmental contamination—a.k.a brownfields?

Would-be real estate investors no longer need to feel discouraged about the legal liabilities associated with purchasing a brownfield site in Kentucky. They can enjoy the benefits of owning such properties by “land recycling” while helping to improve the environment.

The Kentucky Department for Environmental Protection (DEP) hopes to encourage land recycling through an initiative called the Voluntary Environmental Remediation Program (VERP). Commercial developers, entrepreneurs and municipalities can use VERP to rejuvenate polluted, idled or underused brownfield sites to boost economic development in their communities.

The program derived from a 2001 law passed by the Kentucky General Assembly to help the redevelopment of tainted prime real estate, while reducing investor uncertainty about owning such property. A lengthy negotiation ensued between environmental and industry representatives over such questions as, “How clean is clean?” when it

comes to soil and groundwater contamination and protecting human health and the environment.

Finally, in the fall of 2003 the two sides reached an agreement on the regulation for VERP, which provides a standard for remediation and goals for cleanup.

“Developing the regulation for the Kentucky Brownfields Program was quite a challenge,” said Herb Petitjean, state coordinator for the brownfields program. “However, through a collaborative effort featuring many industry and environmental stakeholders, we were able to compromise on the issues and get a package approved that everyone can live with. So we’re very pleased with the result, which will serve to protect our citizens while promoting economic development.”

The various organizations charged with negotiating the new regulation included the Kentucky League of Cities, Kentucky Chamber of Commerce, Associated Industries of Kentucky, Kentucky Resources Council, Greater Louisville Inc., Kentucky Infrastructure Authority, Louisville Metro Government and engineering, banking and consulting representatives.

The state doesn’t currently have a specific inventory of brownfields in Kentucky, but preliminary estimates indicate there may be as many as 3,000 such properties based on information contained in the state Superfund database.

“The Kentucky Brownfields Program recently received a \$616,000 federal grant to pursue brownfields redevelopment,” said Petitjean. “In addition to other activities, this funding resource will help us determine a more accurate count of brownfields in Kentucky, and allow us to conduct a series of workshops across the state to educate environmental consultants about the new brownfield regulation.”

To learn more about brownfields in Kentucky, contact Herb Petitjean at (502) 564-6716 or log onto <http://www.waste.ky.gov/programs/sf/VERP.htm>

To date, the University of Louisville Papa John’s Cardinal Stadium project is the most successful example of a brownfield redevelopment in Kentucky. Photo by Keith Sims



Exotic pest is potential threat to Kentucky's ash trees

By Sara Sanders
Division of Forestry

A highly destructive beetle from Asia has been recently introduced to North America. It is the emerald ash borer (*Agrilus planipennis*), and it was accidentally brought to the states in infested cargo shipping crates and pallets. The insect is native to eastern Russia, northeastern China, Mongolia, Taiwan, Japan and Korea. It attacks and kills all species and ages of North American ash (*Fraxinus spp.*).



ABOVE LEFT: An adult beetle can grow between 7 and 13 millimeters long and have a metallic green color. Photo by the California Department of Food and Agriculture

ABOVE RIGHT: These "S-shaped" larval galleries are the result of tunneling, which will eventually kill the tree within two to four years. Photo by Canadian Food Inspection Agency

TOP RIGHT: These trees are showing advanced signs of emerald ash borer damage. Photo by the U.S. Forest Service

The emerald ash borer (order *Co-leoptera*) belongs to the family known as metallic wood-borers (*Buprestidae*). Adults, seen from late May through early August, are one-half inch in length and have a dark metallic green coloration. The female lays individual eggs on the bark surface or within bark cracks and crevices. As the larvae hatch, they tunnel into the tree, where they feed on the phloem and sapwood. They also excavate S-shaped galleries immediately under the bark. The tunneling action effectively cuts off the tree's water and nutrients, eventually killing the tree. The larvae are white with a broadly flattened head and are known as flathead borers. They develop through mid to late spring, and adults emerge through small (1/8 inch) D-shaped exit holes in the trunk and main branches.

While most borers attack only

severely weakened trees, the emerald ash borer kills healthy trees as well. To date, infestations of the emerald ash borer have been discovered in Ontario, Canada, Michigan, Maryland and Ohio, and more than six million ash trees have been killed. The movement of infested ash logs, firewood and nursery stock is spreading the insect, and as a result Michigan and Ohio are under quarantines to control the sale of ash products. However, it is likely that the borer will be found in Kentucky in the near future.

If left unchecked, the impact of emerald ash borer in Kentucky will be similar to that of chestnut blight and Dutch elm disease, which devastated natural and urban forests in North America during the twentieth century.

In Kentucky, native ash species include white, green, black and blue, and it

is estimated that there are 570,000 acres of ash in the Commonwealth. Ash, in addition to being a critical component in our natural forestlands, is also a favorite landscape tree in urban settings. The tree is also of vital economic importance to our state, as it is sold for sawlogs, veneer logs, rough and grade lumber, pallet lumber, furniture squares, drumstick blanks and tool handle blanks.

Infestations of the beetle are difficult to detect until the later stages of tree decline. Symptoms include small vertical splits in the bark, S-shaped larval galleries, small D-shaped exit holes, branch dieback, and epicormic shoots on the main trunk. Once attacked, trees are generally killed within two to four years.

Presently, there is no effective insecticide to kill the borer. Infested trees must be immediately removed and destroyed to prevent spread. Landowners can spray uninfested landscape trees with the systemic insecticide Imidacloprid, but it is not 100 percent effective against attack. Imidacloprid is found in commercial insecticides, including Admire, Condifor, Gaucho, Premier, Provado and Marathon. For best results, the insecticide should be applied in early to mid spring to target newly hatched larvae that appear in July.

For additional information and photographs about the emerald ash borer visit the U.S. Forest Service's Web site at <http://www.na.fs.fed.us/spfo/eab/> 

Capturing carbon— working to clean the air

By Eric Gracey
Division of Forestry

The Division of Forestry and American Electric Power Service Corp. (AEP) have entered into a unique partnership, the first of its kind in Kentucky.

In the spring of 2004, AEP, as part of the U.S. Department of Energy's, Global Climate Challenge Program (GCCP), will assist the Division of Forestry's effort in establishing the Green River State Forest as the first bottomland hardwood state forest in Kentucky. The GCCP began in 1994, with commitments from electric utility companies looking for ways to reduce or sequester greenhouse gases. The program works on the premise that the harmful effects of carbon dioxide released into the atmosphere can be reduced through reforestation.

Healthy, vigorous growing forests naturally remove carbon from the atmosphere and sequester it into forest biomass. Once these forests are established, the utility companies could possibly receive carbon credits for their efforts, which could be used to offset future regulatory requirements. Carbon credits are based on 2,000 pounds of carbon stored in the soil or vegetation and represents 7,333 pounds of carbon dioxide removed from the air. Carbon credits are a viable commodity for utility companies and are traded on the Chicago Climate Exchange, which is a multi-national, multi-sector market place for trading greenhouse gas emissions.

Bottomland hardwood forest restoration offers utility companies the "most bang for the buck." These areas contain high-quality sites, where trees have the potential to put on a tremendous amount of growth quickly, therefore capturing and storing carbon at higher rates than less productive areas. From an environmental standpoint, any help in restoring this forest type is needed. Flood control and conversion to agriculture has reduced the



TOP: A Green River State Forest sign declares the forest restoration project. **ABOVE:** The Green River State Forest is expected to be a healthy, vigorous forest with mature trees within 25 to 30 years after the project takes place. **BELOW:** This flat field in the state forest will be planted with bottomland hardwood seedlings. Photographs provided by Chris Oelschlager

bottomland hardwood acreage to less than 20 percent of the original 22 million acres found in North America.

The Green River State Forest, located at the confluence of the Green River and Ohio River, is a critical component in protecting and re-establishing the bottomland hardwood component of the Green River Watershed, the fourth most diverse ecosystem in North America. AEP will plant, at no cost to the state, approximately 174,500 bottomland hardwood seedlings on 400 acres of Green River State Forest in March. The area slated for reforestation had been previously cleared for agricultural purposes. AEP in exchange will obtain the rights to any potential carbon sequestration credits under the GCCP, associated with the project.

This agreement does not affect the Division of Forestry's ability to manage



the property for its intended purpose of public education and demonstration of sound forest management practices, including future thinning or selectively harvesting the forest. These activities when based on sound forest management practices typically increase the overall growth rate of the site, and the forest's ability to sequester carbon.



Cress is Kentucky's chief environmental regulator

By Matt Hackathorn
Division of Waste Management

In January, Gov. Ernie Fletcher selected Lloyd R. Cress as the new commissioner of the Kentucky Department for Environmental Protection (DEP).

Cress, a veteran environmental attorney with more than 30 years of regulatory experience, most recently served as environmental advisor to the Kentucky Chamber of Commerce while working for Greenebaum, Doll and McDonald, PLLC. In his previous position, Cress represented Kentucky industry as a participant in the cabinet's consensus-building efforts on regulatory issues.

He was deeply involved in the negotiated rule-making process that gave rise to the cabinet's present groundwater protection regulation, and he served on the Brownfields Task Force, helping to develop environmental cleanup standards recently approved by the 2004 General Assembly.

Commissioner Cress has come full circle in his environmental career, having served as general counsel for the Kentucky Water Pollution Control Commission and the Kentucky Air Pollution Control Commission, predecessor agencies to the Environmental and Public Protection Cabinet.

His environmental leadership also extends into such issues as water quality, air quality and waste management. During his first couple of weeks at the reins of DEP, Cress was busy addressing such issues as new environmental legislation and a reduced budget. However, he graciously accepted an interview with Land, Air and Water (LAW) magazine.

LAW: Are you happy to be here?

CRESS: *This is a wonderful job for a person to have an opportunity to*

have an effect on so many important issues. I was nearing a conclusion to my professional career and was not prepared to retire. Environmental policy issues have always intrigued me, so I look forward to the opportunity to have a positive impact on Kentucky's environment.

LAW: You started your environmental career in state government more than 30 years ago. Now that you're back, is it what you expected?

CRESS: *I think people on the outside get a distorted view of the amount of activity that takes place in this agency. The regulated community just sees the tip of the iceberg, and they don't realize how large the iceberg is that they don't see. So I'm certainly surprised to see how much goes on behind the scenes.*

LAW: You're not overwhelmed are you?

CRESS: *I'm not very easily overwhelmed.*

LAW: Do you have a philosophy on how you intend to lead this agency?

CRESS: *I have an underlying philosophy that will guide my actions. It's only a personal philosophy, not an agency philosophy.*

I believe it's critically important to identify matters involving significant environmental values, such as the protection of public health. It's also important to identify those requirements that do not relate to significant environmental values, and to help reduce or mitigate those requirements.

In other words, we need to separate the important aspects of environmental protection from the procedural trappings that we have developed that are not essential to achieving environmental goals. Once those procedural trappings are identified, we need to minimize or eliminate them.



Lloyd R. Cress

LAW: Do you have a vision for how to protect Kentucky's environment over the next four years?

CRESS: *We need to find out what's really important to accomplish and then make sure we're accomplishing that. Certainly the protection of public health has to be at the top of the list. We need to prioritize our efforts and be absolutely sure that we achieve our priority goals.*

LAW: Have you developed a priority list?

CRESS: *I think it's important for the agency to have a strong outreach program in dealing with outside entities and not wait until people come to us. It's important for the agency to seek out interest groups, municipalities, environmental groups and industry to educate them about what we're trying to do and to make sure their input is included in the regulatory process.*

Since public health is a top priority, I'd like to see us increase our communication with other agencies, such as the Cabinet for Health Services, and strengthen our internal resources to evaluate potential health risks. This would allow us to focus our regulatory efforts on real or potential problems and minimize our efforts on insignificant issues.

The administration of our permit programs is another area of focus. We're not achieving the results everyone would consider desirable for a variety of reasons. I certainly do not say that to be critical of any of our employees, but I think our permitting programs need a fresh approach to be fully effective.

Another initiative I would like to implement is a compliance enforcement program,

Continued on Page 16

ROUND TWO

Tire Amnesty VS. waste tires

By Matt Hackathorn
Division of Waste Management

One of Kentucky's most successful environmental programs is currently making its rounds across the Commonwealth. The highly effective Tire Amnesty Program, which offers citizens in every county an opportunity to dispose of unwanted tires at no cost, began its spring campaign in March, collecting waste tires in the Bluegrass and Purchase area development districts.

"Tire Amnesty is a labor intensive endeavor, but it's well worth the effort considering we're keeping literally millions of waste tires out of landfills and illegal dumps,"

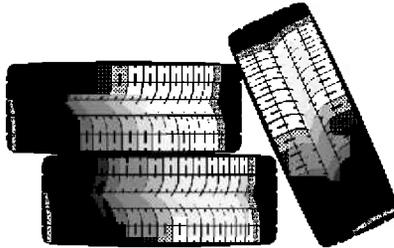
Fred Kirchhoff
Resource Conservation Section

The Resource Conservation Section of the Division of Waste Management (DWM) organized visits this spring to 24 counties from March through July. "Tire Amnesty is a labor intensive endeavor, but it's well worth the effort considering we're keeping literally millions of waste tires out of landfills and illegal dumps," said Fred Kirchhoff, who implements the program. "During 2003, Tire Amnesty visited 45 counties and collected approximately 1.6 million tires at a cost of around \$1.4 million."



In May 2003, Tire Amnesty visited Laurel County. Above, heavy equipment is filling tractor trailers to haul off more than 56,000 tires collected. Photo by the Division of Waste Management

Tire Amnesty was originally designed as a one-time offer to citizens, but the success of the first collection from 1999 to 2001 compelled the 2002 Kentucky General Assembly to continue the program. The first Tire Amnesty accounted for the collection and proper disposal of more than 5 million waste tires. Round two covers 2003 to 2005.



Funding for Tire Amnesty comes from a \$1 fee on all new replacement motor vehicle tires sold. All recovered tires go to beneficial end-use purposes.

The fall 2004 Tire Amnesty will visit 23 counties within the Barren River, Big Sandy and Kentucky River area development districts.

For more information about the program, contact Fred Kirchhoff or Todd McCoy at (502) 564-6716, or visit the Tire Amnesty Web site at <http://www.waste.ky.gov/programs/rcla/Tire+Amnesty.htm>



Spring 2004 Tire Amnesty schedule

Powell - March 4-6
Estill - March 11-13
Madison - March 18-20
Garrard - March 25-27
McCracken - March 25-27
Lincoln - April 1-3
Marshall - April 1-3
Boyle - April 15-17
Calloway - April 15-17
Graves - April 22-24
Mercer - April 22-24
Ballard - April 29-May 1
Jessamine - April 29-May 1
Carlisle - May 6-8
Woodford - May 6-8
Anderson - May 13-15
Hickman - May 13-15
Franklin - May 20-22
Fulton - May 20-22
Scott - June 3-5
Harrison - June 10-12
Nicholas - June 17-19
Bourbon - June 24-26
Clark - July 8-10

Biodiesel's importance to Kentucky is showcased

By Julie Smither
Division of Energy

Kentucky is one of the country's leaders in the use of biodiesel, an alternative fuel made from soybean or recycled vegetable oil. Biodiesel use in Kentucky has risen more than 1,000 percent since 2002, and plants, storage and distribution sites for biodiesel are also increasing.

The Kentucky Biodiesel Showcase in Frankfort on Jan. 15 featured biodiesel success stories from around the Commonwealth. Nearly 150 participants, including two-dozen legislators, agriculture commodity groups and farmers, heard a discussion on policy and perspectives related to biodiesel use, information on production and distribution and a national perspective on biodiesel.

Biodiesel is the fastest growing alternative fuel in the United States and is an exceptional solution for reducing dependency on foreign oil. It also significantly reduces the toxic pollutants caused by petroleum diesel. With Kentucky's extensive access to feed stocks, producers and distributors, the Commonwealth is in a unique position to capitalize on biodiesel's potential.

Of particular significance to Kentucky's farmers is the impact this increase in biodiesel use will have on soybean crops. A 5 percent blend of soybean oil to petroleum would use 24.3 million bushels of soybeans and increase the output impact of Kentucky's soybean crop by \$160 million. Bean processing would rise by 158 percent over current levels with soybean oil production adding \$50 million dollars and soybean meal another \$151 million.

Gary Stinger traveled from his farm in Union County

to attend the showcase. "Soybeans and corn are of great importance to farmers in western Kentucky," he said. "As one of these farmers, I am particularly interested in the future potential of biodiesel, which would greatly expand markets and demands for our products. Farmers see biodiesel as an excellent opportunity to utilize their ability to produce soybeans, put more money in their pockets, and at the same time ease our country's dependence on imported oil." He added, "We are closely following this issue and hope to start a biodiesel plant here in Union County as early as 2004."

Nine Kentucky school systems now run 600 buses on biodiesel. Mammoth Cave National Park uses biodiesel in all of its heavy equipment, lawn tractors and even in the two ferryboats operating on the Green River, using more than 10,000 gallons of biodiesel annually (see the Fall 2003 issue of *Land, Air & Water*, Page 10). Carmeuse Lime Minerals, two of the nation's largest lime mines located in Maysville and Butler, operate more than 150 pieces of underground equipment on biodiesel and are now the largest single user of biodiesel in Kentucky. East Kentucky Power Cooperative will be using more than 25,000 gallons of biodiesel a year in its trucks and equipment, and Murray State University and the University of Kentucky use biodiesel in their fleets.

"Kentucky has been a leader in building broad,

Continued on Page 11



1) *Mammoth Cave National Park operates two ferries using biodiesel on the Green River. "The air quality and environmental improvement benefits make this the fuel of choice." Ron Switzer, superintendent, Mammoth Cave National Park. Photo provided by the Mammoth Cave National Park*

2) *"Farmers see biodiesel as an excellent opportunity to utilize their ability to produce soybeans, put money in their pockets, and at the same time ease our country's dependence on imported oil." Gary Stinger, soybean farmer, Union County. Background and soybean photos provided by the Division of Conservation*



3) *Environmental and Public Protection Cabinet Secretary LaJuana Wilcher speaks at the biodiesel showcase. Secretary Wilcher highlighted the importance that biodiesel has in Gov. Fletcher's administration. Photo provided by the Kentucky Soybean Association*

4) *"The showcase highlighted how the needs of government and industry advanced further and faster when seemingly diverse groups are brought together. Biodiesel benefited the underground miners through cleaner air, benefited the environmental community through the use of a renewable resource and benefited the agricultural community through the development of a new market." Garth Kuhnhein, Carmeuse Lime Mine. Photo provided by Carmeuse Lime*





Peggy Jackson with the Division of Water served as an instructor teaching Southern States employees the basics of preparing nutrient management plans. Division of Conservation photo

Training provides valuable service that will assist farmers

By Martin Bess
Division of Conservation

Farmers today are not only faced with the challenge of trying to produce a profitable living from their land, but they are also required to be responsible landowners while doing it. Animal waste and chemicals, such as fertilizers used to produce healthier and bigger plants, can pollute the state's water resources. Nonpoint source pollution, as these products are referred to, can be a significant contributor to the state's water pollution.

The Kentucky Agriculture Water Quality Act requires a farmer to develop and implement a nutrient management farm plan if animal manure or chemical fertilizers are to be applied to cropland. A nutrient management plan is a method of demonstrating that the farmer is trying to minimize the environmental impacts of raising livestock, while also improving the efficiency of the farming operation. These plans are also required, and must be approved by a certified nutrient management planner, if the farm is a confined animal feeding operation or if a farmer is applying for or receiving state or federal cost share assistance.

In February, a three-day course on

nutrient management training was held at the University of Kentucky's Main Chance Research Farm in Fayette County. Forty-one Southern States Cooperative facility managers and sales personnel participated in the event. The course trained the participants in helping farmers prepare nutrient management plans.

Participants received personalized, on-the-farm training taught by an interagency focus group consisting of personnel from the Kentucky Division of Conservation, Division of Water, USDA Natural Resources Conservation Service and the University of Kentucky College of Agriculture. The participants conducted field tests to determine the soil phosphorous index, defining erosion and water pollution possibilities if animal manure and/or commercial fertilizers are applied. Additional training resources that added realism to the workshop included laptop training computers. They experimented with actual on-farm models, learned about the different characteristics of dairy, poultry and beef livestock manure and application consideration on various land features and cropping needs. Introductory, as well as comprehensive nutrient

management plans were prepared and submitted during the workshop from case studies of different farms.

The basic guideline from which this training was developed is the USDA-NRCS 590 Practice Standard for Nutrient Management. Funding for this course was supplemented from a grant obtained from the USDA Sustainable Agriculture Research and Education program, through the Kentucky Division of Conservation.

For more information about nutrient management plans, visit <http://www.ca.uky.edu/enri/nutmgmt.htm>



Biodiesel's importance to Kentucky is showcased

Continued from Page 10

effective coalitions to advance biodiesel use in the state," said Joe Jobe, executive director of the National Biodiesel Board. He attributed the state's success in part to the enthusiasm and leadership of Kentucky soybean growers and to the Kentucky Clean Fuel Coalition's proactive involvement.

Noting Kentucky's rank as the 15th largest soybean grower, producing 70 percent more soybeans than it processes, Gov. Ernie Fletcher said, "We must invest in soybean processing infrastructure to realize the benefits of an expanding market. We will work to make sure Kentucky does not miss out."

For more information on biodiesel, contact Melissa Howell at the Kentucky Clean Fuels Coalition (502) 452-9152 or e-mail KCFC@aol.com. Also visit the Kentucky Division of Energy's Web site at www.energy.ky.gov.



Free compliance services that assist Kentucky businesses

By Rose Marie Wilmoth
Air Quality Representative for Small Business

Gov. Ernie Fletcher's pledge to eliminate "waste, fraud and abuse" in state government consequently resulted in the reorganization of many of the state's cabinets. As part of the restructuring, the Environmental and Public Protection Cabinet (EPPC) was created from the former Natural Resources and Environmental Protection Cabinet, the Labor Cabinet and the Public Protection and Regulation Cabinet.

The combination of the three cabinets has brought together similar programs, such as the Department for Environmental Protection's Small Business Air Quality Assistance Program and the Department of Labor's Division of Education and Training. Although the two are different in many ways similarities also exist, and the two programs will be working more closely with one another in the future to accomplish their respective missions.

Small Business Air Quality Assistance Program

The Kentucky Small Business Air Quality Assistance Program is a requirement of the Clean Air Act Amendments of 1990 (CAAA). Its services began in 1994 and was designed to assist small businesses in complying with the law through technical assistance and education.

A small business, defined as 100 employees or less, can work closely with the program to learn about environmental regulations that will affect its day-to-day activities. "These companies have as much legal responsibility to comply with environmental laws as big companies," said John Lyons, director of the Division for Air Quality. "Big and small businesses face the same environmental challenges. However, small businesses lack the resources or personnel to deal with these problems every day." That's where the Small Business Air Quality Assistance Program steps in. Free, confidential assistance is always available to assist small businesses in complying with the state's air quality regulations.

The program is required to have three components: 1) an advisory panel that monitors the program's effectiveness; 2) an ombudsman who develops information and promotes awareness of the free services available to small businesses; and (3) a technical assistance program, or KBEAP (Kentucky Business Environmen-

tal Assistance Program), that provides air quality technical and compliance assistance to small businesses.

Occupational Safety and Health Program (OSH)

The Department of Labor's Occupational Safety and Health Program was established in 1972 by the Kentucky General Assembly. Within this program, the Division of Education and Training was created to assist Kentucky's employers and employees in voluntary compliance with OSH standards.

"The division provides, upon request, seminars and training in both safety and health, and consultants are available to assist employers on-site in providing a safe and healthful working environment by identifying workplace hazards," said Anthony Russell, director of the Occupational Safety and Health Program. "The division provides assistance in the correction of hazardous conditions, and all services are offered free of charge."

Statistical data is also collected pertaining to work-related injuries and illnesses in Kentucky, and division staff assist groups in evaluating their typical injury problems.

Consultative surveys, or workplace evaluations, are offered that assist employers in providing a safe and healthful workplace for the working men and women of the Commonwealth.

Surveys are conducted by division

personnel who are experienced in technical areas such as electrical safety, fire protection, confined space entry, indoor air quality, ergonomics and industrial hygiene.

The basic concepts of the Small Business Air Quality Assistance Program and the Division of Education and Training are similar. Both are based on the belief that businesses want to comply with regulatory programs if they understand what is required, and the compliance assistance programs offered are a proactive method of increasing compliance.

The programs offered by the Division of Education and Training serve all businesses, large and small, and have a larger audience than the air quality program. However, the Small Business Air Quality Program may be reaching small businesses that OSH is not. By sharing audiences, both programs may be able to assist more companies.

Unlike large companies, small ones frequently have only one person who is responsible for the federal OSHA (Occupational Safety and Health Administration) standards, U.S. Environmental Protection Agency and Worker's Compensation programs. "One solution might be to offer 'one-stop' training events on a combination of these topics, thus reducing the burden of multiple training sessions," said Russell. "The OSHA program focuses on removing contaminants from inside buildings, while the air quality program focuses on reducing emissions produced from facilities."

By uniting the programs under one umbrella, it may increase the interest in finding a technical solution that meets the goals of both OSHA and CAAA.

For more information about the Small Business Air Quality Assistance Program, call Rose Marie Wilmoth at (502) 564-2150 and for Occupational and Health Safety Program assistance call Anthony Russell at (502) 564-3070.





Mark Thompson with the Department for Natural Resources (left), along with the University of Kentucky's Dr. Don Graves (center) and Don Gibson, Appalachian Fuels (right) stand next to black walnuts and white pines planted on the Starfire Mine site. Photo by the Department for Natural Resources

Reduced soil compaction essential to reforestation

By Paul Rothman
Department for Natural Resources

In an effort to aggressively promote and encourage forest land as the Post Mining Land Use (PMLU) of choice on Kentucky coal mines, the former Department for Surface Mining Reclamation and Enforcement (DSMRE), now part of the Department for Natural Resources, began the Kentucky Reforestation Initiative.

A PMLU is an approved plan for revegetative standards and productivity requirements that operators must meet prior to bond release.

The initiative, which started nearly nine years ago, was a collaborative effort between the DSMRE, University of Kentucky (UK), federal Office of Surface Mining (OSM), environmental groups, the coal industry and other interested parties to develop reclamation guidelines that provide for the establishment of healthy productive forests on coal-mined lands.

At that time, the DSMRE had revised its revegetation regulations and standards pertaining to tree and shrub stocking requirements to reduce the total number of stems per acre required at bond release. It also required, depending on the PMLU, the establishment of hard mast tree species. Following those changes, the DSMRE suspected that the Kentucky coal

industry was either unaware or unresponsive to these recent changes and it, along with UK, began holding public meetings in the eastern and western Kentucky coal fields to promote and encourage reforestation of mined lands. As a result of the public feedback from this activity the Kentucky Reforestation Initiative was born.

Ongoing reforestation research conducted by UK has demonstrated that high-value hardwood forest can be successfully established on strip-mined land. Previous studies had already determined that eliminating or reducing compaction during the grading process was crucial to the establishment, survival and proper development of productive forests on mined land.

In an effort to develop proper guidance on reforestation techniques, the DSMRE assembled a reforestation working group comprised of various state and federal agencies, UK and Virginia Tech faculty, representatives from the coal and forest products industries and environmental groups. The group's primary purpose was to review the relevant laws, regulations and reclamation techniques to determine what changes were necessary to provide

for the establishment of forests on mined lands and to consider what measures were needed to promote forest land as the PMLU of choice.

For a period of six months, the working group visited many mine sites and met a number of times to evaluate the different reclamation techniques that had been observed. As a result, the working group submitted many suggestions and recommendations that were subsequently incorporated into guidelines on the selection of growth medium, grading techniques, selection of tree compatible ground covers, soil amelioration, tree selection and planting recommendations.

Since the issuance of these guidelines there has been a growing interest in reforestation and an increase in the number of permit applications that propose a PMLU requiring the establishment of trees and shrubs. There has also been much interest from other state regulatory agencies, and a number of them have established similar reforestation programs.

Interestingly, it was DSMRE field inspectors who initially exhibited the greatest aversion to the new reclamation techniques. This was largely due to the ingrained belief that a site was not stable if it wasn't repeatedly graded, or was not properly reclaimed unless it had a pasture-like appearance. As a consequence, the mining industry was hesitant to embrace this guidance even if it resulted in reduced reclamation costs and increased tree survival and growth.

Over the last several years there has been growing regional interest in reforesta-

Continued on Page 16

The resurrection of Wilson Creek

By Morgan Jones, Division of Water
Dr. Art Parola, University of Louisville
Margaret Shea, Bernheim Research
Forest and Arboretum

Bernheim Forest is a 14,000-acre research forest and arboretum located approximately 30 miles south of the fast-growing metropolitan area of Louisville. Set aside some 74 years ago by Isaac Bernheim, who amassed a fortune in the bourbon whiskey business, Bernheim Forest is committed to education and research related to natural areas management and restoration.

Wilson Creek, which flows through the research forest, is a tributary to the Rolling Fork of the Salt River, and is classified a high-quality water by the Kentucky Division of Water. At least one



A newly constructed stream channel at Wilson Creek. Photo provided by the Division of Water

The Bernheim Research Forest and Arboretum and the University of Louisville, assisted by a Section 319(h) Nonpoint Source Pollution control grant, has begun a project to return the creek to a more natural meandering condition on its original course and bring back the original floodplain, along with native grasses, shrubs and trees.

portion of the stream was straightened, relocated to the hillside and periodically dredged in the past to allow for farming of the adjacent bottomland. Consequently, these changes brought about destruction of the riparian (stream side) forest.

In addition to riparian forest destruction, the previous uses of the land have resulted in physical damage of the stream through incision and widening. The steeper, wider and deeper channel has resulted in lower groundwater levels and reduced frequency of flooding into the floodplain. Changes in the creek bed and banks of Wilson Creek have caused a decrease in water quality. In addition sediment flow, brought about by bank erosion and destabilization of the valley wall, has increased into the stream.

The Bernheim Research Forest and Arboretum and the University of Louisville, assisted by a Section 319(h) Nonpoint Source Pollution control grant, have begun a project to return the creek to a more natural meandering condition on its original course and bring back the original

floodplain, along with native grasses, shrubs and trees. The riparian area that runs along the nearly 3,200-foot-long segment of the creek is currently a tall fescue hay field. It will soon be revegetated with native woody and herbaceous species typical of riparian communities from this region of the state.

The objectives of the stream restoration are:

- to create a dynamically stable stream that provides sustainable stream habitat,
- to increase the interaction of the stream with its floodplain by decreasing levels required to flood overbank areas,
- to create a channel that will maintain a deep, low-flow pool-riffle habitat, and
- to provide as much shading to the stream as possible by revegetation and retaining as much existing tree cover as possible.

The goal of the project is to demonstrate improved water quality in streams that have been affected by human activi-

ties in central Kentucky, of which there are many. A demonstration riparian buffer and restoration project will be created and maintained, and the site will be designed to facilitate educational programs for students, teachers, landowners and professionals interested in riparian and stream restoration.

Given the project's location within the boundaries of the Bernheim Forest and Arboretum, and the relative accessibility by gravel county road of the project area, it is uniquely positioned to fulfill this goal. The project will be well protected as part of Bernheim's Natural Areas Program, and the site will be used for education, technology transfer and research by a variety of groups from local school-aged children to classes and researchers from several area universities.

During a five-year study, the Wilson Creek valley was surveyed and information gathered on the current channel characteristics in order to ensure that the design of

Continued on Page 20

Web site provides wealth of knowledge for all ages

By Kate Shanks
Office of Communications and Outreach

These days the amount of information available with the flip of a switch can be overwhelming. From the tickers at the bottom of the television screen when watching the news to countless numbers of Web sites offering just about everything you need and a whole lot of what you don't. However, turning to the Environmental and Public Protection Cabinet (EPPC) to learn about your environment is a great idea.

Visitors to the EPPC Web site find helpful information about divisions and offices within the cabinet. Search those sites even further and find information pertaining to recycling within a community to conserving water in the home.

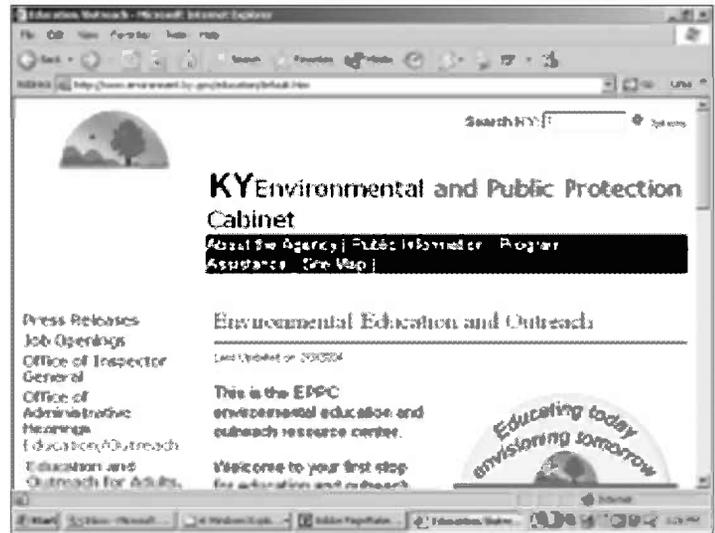
We live in a face-paced world of one-stop shopping and now the EPPC offers one-stop shopping for all Kentuckians' environmental information needs. Visit the cabinet Web site at www.environment.ky.gov and quickly find the Environmental Education and Outreach link on the left-hand side of the screen. You can also locate the site directly at www.environment.ky.gov/education. This site is a catchall for some of the most commonly requested information about the environ-



Teachers can incorporate the "Enviro-Kids" Web site into lessons in the classroom, as it is a great place for students to do research.

The Environmental Education and Outreach Web site is easily accessed and simple to use.

Image provided by
Kate Shanks



ment throughout the EPPC's entire Web site.

The site is divided into three primary sections that are divided into subsections. The primary sections include "Education and Outreach for Adults, Families and Business Owners," "Education Materials for Teachers," and "Enviro-Kids."

The first of these primary sites provides an extensive listing of frequently asked questions. Here, people can learn about Kentucky's pollution problems and how they can get help managing their forests and developing agriculture water quality plans. They can also find out where the EPPC regional offices are located, how they can get involved in protecting the environment in their own communities and why burning of garbage is against the law.

Have you ever wanted to take a hike in some of Kentucky's most pristine areas? Do you have a small business and want free confidential help in complying with regulations? Do you need help with a groundwater protection plan? Do you know if you need a groundwater protection plan? Answers to these questions and many others can be found on this Web site.

Educators will find the "Resources for Teachers" link to be a unique tool for teaching about the environment. It is

designed to be a resource and collection of materials that will reduce the amount of time educators spend searching for quality materials. Educators can find units of study correlated to KERA standards on a variety of themes, such as special events and activities, the Youth Environmental Summit and the Envirothon. Additional materials are available as well.

Not only does this Web site provide an extensive amount of background information in an organized way, it also provides teachers with information about professional development opportunities. Educators can feel confident that they will find quality materials that are Kentucky-based.

"Enviro-Kids" provides a safe place for children to visit if they are looking for information about the environment online. At this site children can meet the Energy Ant or visit Dr. E's Energy lab. Children can learn about what other children their age are doing to promote cleaner air, learn about Kentucky's forests and take a trip through the past on Kentucky's environmental timeline. Teachers can incorporate this kid-friendly page into lessons in the classroom, as it is a great place for students to do research.

So visit the EPPC Web site and you'll never run out of interesting topics to discover.



Cress is Kentucky's chief environmental regulator

Continued from Page 7

where the cabinet's enforcement efforts are supplemented by a program encouraging self-policing by the regulated community. We need to motivate industry to better police themselves, which supports the idea of government trying to do a better job with less resources.

LAW: What do you say to those who claim it's a conflict of interest for you to be Kentucky's chief regulator after having spent the last several years representing industry?

CRESS: *I have several observations about that. My career began with this agency. At that time we had only a handful of rudimentary regulations, and I take great pride in what we were able to accomplish then in protecting Kentucky's environment considering some of the problems that we faced.*

I think it's important for people who serve in government to have a broad range of experience - a broad view of the issues. My previous role was to work with the agency to identify and resolve regulatory issues for industry. I worked with the agency to get a better definition of the requirements needed to foster better compliance. I participated in several consensus-building groups to help the cabinet find solutions to difficult environmental problems, and I'm proud to say that we were successful in virtually every instance.

Obviously, I need to devote a great deal of effort to training myself to view issues from a different perspective than I viewed them for the past 30 years. That will be a challenge for me, and I'm confident that I'm up to it. The more difficult challenge is convincing others that I am, in fact, viewing the issues from a different perspective.

LAW: What's your take on the budget crunch and hiring freeze?

CRESS: *These issues increase the challenge for us in doing our jobs, but they are facts of life that we can't avoid. We need to figure out how to use the available resources to the best advantage.*

LAW: Did Governor Fletcher give you any specific guidance when he appointed you commissioner?

CRESS: *There were no specific marching orders from the governor's office. He's counting on Secretary Wilcher and me, as well as other appointees, to exercise good judgment. The people of Kentucky deserve a neutral perspective from this office when dealing with environmental issues, and that's what I intend to provide.*

LAW: Is there anything else you'd like to add?

CRESS: *I'd like to emphasize the important and valuable contributions of the employees of this agency in performing our mission to protect public health and the environment. We must always keep in mind the importance of our role and be proud to serve the public.*



Reduced soil compaction essential to reforestation

Continued from Page 13

tion, and the DSMRE has conducted reforestation presentations for approximately 100 coal companies and numerous land holding companies. The DSMRE has worked closely with UK on the development and construction of more than 100 acres of reforestation plots on Appalachian Fuel's Starfire Mine in Breathitt County. The emphasis of this research has been on the establishment and growth of desirable hardwood species, such as white oak, red oak, white ash, black walnut, yellow poplar and eastern white pine.

The ongoing field research has been very successful, and tree survival and growth in the lesser compacted areas are more than twice that observed in the compacted areas.

UK is currently developing mechanical methods that can be used to rectify compaction problems that exist on previously reclaimed sites. Along with assistance from the U.S. Forest Service and the U.S. Department of Energy, UK has also started a program to re-establish 3,000 acres of forestland throughout the Kentucky coalfields.

Carbon sequestration studies and the ability to re-establish commercially viable forests are the underlying focus of this recent activity. (See *Capturing carbon—working to clean the air* on Page 6 (learn more about carbon sequestration.)



Kentucky Energy Services Coalition *Continued from Page 2*

It's likely that most of these projects would not be taking place now because of budget considerations if it were not for ESPC. These projects will have a positive impact on the Commonwealth's budget problems, the occupants of the facilities and the environment.

Other activities have included creating brochures with information on Energy Savings Performance Contracting specific to different sectors of facility owners, such as K-12 districts,

local governments and state agencies. The KESC also helped in the development of requests for proposals and contracts used by the Finance and Administration Cabinet to administer these projects.

The KESC meets on the third Tuesday of every month. The meetings are held at the Division of Energy's office at 663 Teton Trail in Frankfort. More information on the KESC and ESPC can be found at www.escperform.org and www.energy.ky.gov.



GIS helps commission meet its mission

By Greg Abernathy
Kentucky State Nature Preserves Commission

Geographic Information Systems (GIS) have provided the Kentucky State Nature Preserves Commission with new tools that aid it with everything from species tracking and monitoring to preserve design and management.

GIS is a system of computer software, hardware, data and trained personnel that allows for data creation, modification and analysis. Data in the system are stored in real world coordinates that enable the commission to integrate data from other agencies and organizations. The modeling and mapping capabilities of a GIS can provide insight into species and ecological communities and allow for assessment of threats to their continued existence.

Traditionally the commission has used paper maps, DOS databases, blue line survey plats and Mylar overlays to assist with monitoring, tracking and decision making. Since its inception, the commission has utilized various methods to develop the Kentucky Natural Heritage Program (KYNHP) database of species, ecological communities, managed areas and ecologically significant sites. In the early 1980s, the KYNHP began using the Biological and Conservation Data System (BCD), a DOS database developed by The Nature Conservancy. U.S. Geological Survey 7.5-minute topographic paper maps were used

in conjunction with BCD to provide a means of storing the locations of features maintained in the database.

In the late 1990s, the commission began utilizing ArcView, Environmental Systems Research Institute's (ESRI) desktop GIS application. ArcView provided a suite of new tools and offered the ability to begin storing feature locations digitally in real world coordinates. The advent of desktop GIS capabilities has led to the development of new tools and applications over the last few years by NatureServe, the coordinating organization of the Natural Heritage Network. In 2002, the KYNHP database was migrated to Biodiversity Tracking and Conservation System (BIOTICS), a custom ArcView application developed by NatureServe. The database was upgraded in June 2003 to BIOTICS 4, the latest version from NatureServe that integrates ArcView and Oracle, two industry standard applications. BIOTICS 4 provides much more functionality and flexibility, enabling greater utilization of the commission's database. The KYNHP database currently contains 10,738 species and ecological community records, 507 site records and 496 managed area records. The commission's implementation and utilization of BIOTICS 4 enables its data to be

more readily compiled with data from other members of the Natural Heritage Network, thus allowing for aggregation of data across political boundaries.

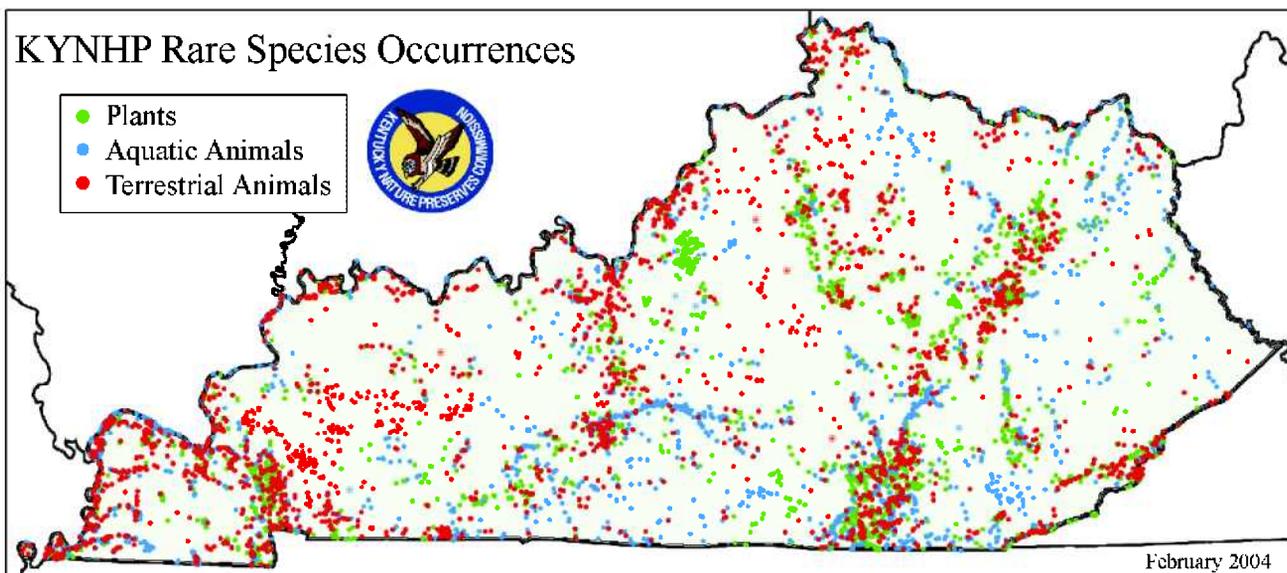
Desktop GIS applications, along with the quality and quantity of spatial data available for Kentucky, have made GIS a tool that nearly all staff utilize. The migration to GIS and the creation of a spatial natural heritage database have provided the commission with a means of developing predictive models that help identify potential species habitat and target field surveys, improved environmental review and data request procedures, enhanced preserve designs, improved preserve management, and enabled the commission to create higher quality cartographic products.

Visit us online at www.naturepreserves.org



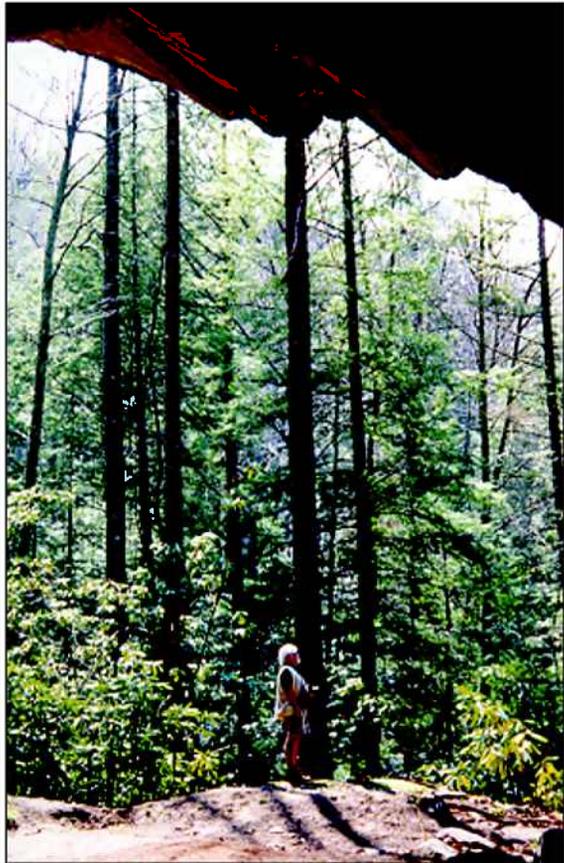
GIS and conservation Web sites:

- NatureServe – www.natureserve.org
- Society for Conservation GIS - www.scgis.org
- ESRI Conservation Program - www.conservationgis.org
- The Conservation Fund's GIS site - www.conservationgis.com
- Kentucky's Geography Network - <http://kygconct.ky.gov>



Connecting license plates with nature and conservation

By William H. Martin
Heritage Land Conservation Fund Board



LEFT: KHLCF Board member Horace Brown views Stone Mountain property in Harlan County from a cave entrance. Photo by Mary Jean Eddins, Department for Natural Resources

ABOVE: A trio of nature plates, including the viceroy butterfly plate, are now displayed on more than 100,000 vehicles in Kentucky.

The first nature plates were sold in 1995, displaying a Kentucky warbler and tulip tree (the state tree). Less than 5,000 were sold in the first year, but they were on the road and getting attention. With additional plates and choices, more than 100,000 have now been sold or renewed in less than 12 months. The nature license plate has been a win-win program for all Kentuckians.

The extra \$10 for a nature license plate is combined with

other revenue to create the KHLCF to purchase important natural areas and wildlife habitat across Kentucky. The lands that are acquired must meet at least one of four criteria:

- natural areas that possess unique features such as habitat for rare and endangered species;
- areas important to migratory birds;
- areas such as wetlands that perform important natural functions that are subject to alteration or loss;
- areas in their natural state for public use, outdoor recreation and education.

Since 1995, more than 21,000 acres across Kentucky have now been conserved with these funds. Acquisitions from willing sellers include:

- Crowe's Chase in Henry County, the first outdoor environmental education

facility in the United States to be developed for the blind and visually impaired;

- Portions of Blanton Forest in Harlan County, the largest old-growth forest in Kentucky and the thirteenth largest old-growth tract in the eastern United States;
- The forests and fields surrounding Lincoln's Boyhood Home in Larue County, managed by the National Park Service;
- Four important tracts at the Jefferson Memorial Forest in Jefferson County, making it the largest publicly-owned urban forest in the United States;
- Emerson-Letourneau Woods, a preserved bottomland hardwood forest in Fulton County.

The ongoing purchases and protection of significant natural areas and wildlife habitat are important to each and every Kentuckian and their quality of life. Kentucky is losing 130 acres of forests and agricultural land to development every day; more than one square mile every week. This conversion rate is placing extraordinary pressure on wildlife by the unsustainable loss and breaking up of their habitats.

If your vehicle doesn't display a nature plate, please consider the preservation of Kentucky's natural heritage and the benefits to all Kentuckians the next time you renew your plate. A big "thank you" to those that have already shown their support for "Nature's Finest"!



There are now more than 100,000 vehicles in Kentucky with a nature license plate. This milestone was recently passed without any fanfare when a Kentucky vehicle owner spent an extra \$10 to display a viceroy butterfly, cardinal or bobcat on the rear of their vehicle. That person and all 100,000 people who have purchased a nature license plate need to be thanked for making the choice to display a nature license plate and for showing that they support and contribute to conservation in Kentucky, specifically the Kentucky Heritage Land Conservation Fund (KHLCF).

Creation of the fund was a major environmental initiative of Gov. Brereton Jones. Establishing the fund and the license plate program was broadly supported and passed by the 1994 General Assembly.

Awards

Dedication to protecting Kentucky leads to awards

By Cecilia Mitchell

Kentucky State Nature Preserves Commission

The words “dedication” and “perseverance” just about sum up the character of two individuals recognized recently by the Kentucky State Nature Preserves Commission (KSNPC). During the commission’s last quarterly meeting, Tom FitzGerald and Ed Craft were honored for having generously given of their time and efforts in protecting Kentucky’s natural resources.

FitzGerald, executive director of the Kentucky Resources Council (KRC), was presented with the Biological Diversity Protection Award, and Craft was presented with the Volunteer Steward Award. Each also received framed reprints of a James Archambeault photograph of Bad Branch Falls, a state nature preserve located in Letcher County.

KSNPC Chair Clara Wheatley said that “Fitz’s” name has become synonymous with environmental protection in Kentucky. “His expertise spans the full breadth of environmental protection issues—surface and underground coal mining; air and water quality; solid, hazardous and radioactive waste; zoning and land use planning and many nonenvironmental issues with a ‘green’ impact.”

FitzGerald began his work protecting Kentucky’s environment in the 1970s with the Appalachian Research and Defense Fund. He established KRC in 1984 and has been its director to this day. KRC is a private, nonprofit environmental advocacy organization that provides resources—legal, technical and advisory—to individuals, communities and social justice organizations on environmental issues that affect their quality of life. FitzGerald was a leader in the cause to successfully reform broad form deed law in Kentucky. He was instrumental in several Lands Unsuitable for Mining petitions filed under the surface mining program including the 1998 petition to protect the significant upper elevations of Black Mountain in southeast Kentucky,

RIGHT: KSNPC Chair Clara Wheatley (left) presents the 2003 Volunteer Steward Award to Ed Craft, along with his wife Tina (right).

BELOW: Tom FitzGerald, executive director of the Kentucky Resources Council, receives the 2003 Biological Diversity Protection Award from Clara Wheatley. Photos provided by KSNPC



our state’s highest elevation and a place of great biological importance. More recently, in 2000 he filed the successful lands unsuitable petition on behalf of the Pine Mountain Settlement School, which helped inspire the school to dedicate the James E. Bickford State Nature Preserve in September 2003.

Ed Craft is a talented woodworker and artist who devotes countless hours assisting with the management of nature preserves in the Bowling Green region and beyond. Craft began volunteering for KSNPC with a trail building project at Vernon-Douglas State Nature Preserve (SNP). He enjoyed the work enough to ask

how else he might help. After hearing what was needed, Craft decided to become a preserve monitor. He was assigned Raymond Athey Barrens SNP and later took on Flat Rock Glade SNP. Additionally, Craft purchased and donated ten fire resistant Nomex® suits to the KSNPC for use when conducting prescribed burns.

“Ed is a jack-of-all-trades and that attitude has served us well on the preserves. He does whatever needs to be done,” said Joyce Bender, KSNPC Nature Preserves and Natural Areas Stewardship branch manager. Craft has helped build firebreaks, participated as a burn crew member, assisted with renovations to the Renfro House at Brigadoon SNP, cleared cedar trees, cleaned up trash and recruited more volunteers. He also finds time to maintain habitat for a rare plant. The woods behind his house harbors *Trillium pusillum*, the least trillium, a state endangered plant.

KSNPC unanimously agreed that both FitzGerald and Craft were deserving of these awards and the acknowledgment of their many contributions to protect and preserve Kentucky’s natural areas and native species. Thank you, Tom and Ed, for all you’ve done to help!



Spring brings new life and Earth Day

By Kate Shanks
Office of Communications and Public Outreach

Every year people all over the world celebrate Earth Day on April 22. They find ways to protect their environment by making changes in their homes, backyards and communities. Teachers celebrate Earth Day with their students by leading various environmental education and awareness activities. Earth Day usually turns into Earth Week, and in some communities Earth Day is celebrated during the entire month of April.

Earth Day does not have to end after April 22. It can be a holiday celebrated every day throughout the year. The Environmental and Public Protection Cabinet (EPPC), along with several other state agencies, teamed up to make this year's celebration of Earth Day a memorable one. Visit the cabinet's Web site www.environment.ky.gov and click on the Earth Day link or visit www.environment.ky.gov/earthday.

This Web site offers ideas to make



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environmentally smart changes in the home. Planning to do some spring-cleaning? Use this site to learn about household hazardous waste storage, disposal and alternatives. Tired of taking out the garbage? Reduce your contribution to landfills and learn how to compost waste. Terrified of receiving your energy bill? Pick up helpful tips on energy savings in the home. Think that leaky faucet does not cost much? Learn how much fixing that leak can save you in dollars.

The Web site will come in handy when preparing backyards for spring and summer. Learn about invasive plants, their effects on the environment and how to identify and remove them from your landscape. Find information about

Kentucky's native plants and how they can bring beauty, butterflies and less maintenance to the yard.

Do you spend time outdoors with your neighbors? Find information about group efforts for celebrating the Earth everyday. Save gas by taking a Sunday ride on a bike instead of in a car. Find Kentucky grown foods and products to buy. Plan an invasive weed pull party or schedule a time to pick up roadside litter in the neighborhood. This site can provide guidance and information about all these options.

Remember! Earth Day is everyday in Kentucky. Celebrate the Earth by considering how daily decisions affect the environment and by making environmentally responsible choices. 

The resurrection of Wilson Creek *Continued from Page 14*

the restored channel allowed for a balance of stability and sediment transport capacity. The design of the restored channel took into account the classification of the existing and proposed streams, the precise causes of instability, and the dimensions, pattern and profile of undisturbed reference streams. Special attention was given to transition areas within the project and those upstream and downstream of the restoration, where the potential for destabilization of the channel is greatest. A majority of the plant material used for revegetation will be propagated by Bernheim Arboretum's staff at their facilities, with some woody species being grown at Division of Forestry nurseries.

In designing for revegetation, the riparian corridor was divided into two zones paralleling the stream channel. The inner zone, 5 meters on either side of the stream, will be densely stocked with trees

and shrubs adapted to occasional flooding and frequent disturbance. Native giant cane, a historic feature of central Kentucky river bottoms, will be re-established as a canebrake in this inner zone. Other species to be used in this zone, all common in undisturbed riparian areas of the forest, include American sycamore, box elder, black willow, dogwood, alder and northern spicebush. The second zone, extending 10 meters beyond the inner, will be planted with a variety of trees and shrubs accustomed to occasional flooding and saturated soils. The remaining floodplain will be revegetated to bottomland hardwood forest typical of central Kentucky. A native, mixed-species herbaceous layer will be established prior to tree planting, which will require removal of the non-native tall fescue. Combined fire and chemical control, designed to rapidly form dense native

communities and minimize soil erosion, will be used to remove the tall fescue.

University personnel and aquatic biologists from the Kentucky State Nature Preserves Commission and the Division of Water will monitor the success of the project. Other agencies and groups providing guidance and assistance include Floyd's Fork Environmental Association, Louisville and Jefferson County Metropolitan Sewer District and the Natural Resources Conservation Service.

Bernheim Forest is committed to working to improve water quality within the entire Wilson Creek watershed, not just within its boundaries. It plans to work with private landowners within the watershed to promote best management practices, and it is felt that the development of this demonstration site along Wilson Creek could be an important focal point for future work to maintain high water quality within the watershed. 

EPA agrees with Kentucky's ozone designations

By Lona Brewer
Division for Air Quality

On Dec. 23, 2003, the U.S. Environmental Protection Agency (EPA) notified Kentucky that it agreed with the state's proposed designations under the 8-hour ozone standard. Official designations by the EPA for the new 8-hour ozone standard must be made by April 15, 2004.

The new 8-hour standard averages ozone levels recorded during a three-year period that must not exceed .084 ppm (parts per million). Monitored levels that average .085 ppm or more are considered nonattainment and in violation. The new standard adds an additional level of protection for children, the elderly and people that suffer from respiratory problems.

The EPA's presumptive requirements for nonattainment areas could have meant that up to 14 counties in Kentucky could have been designated as not meeting the new standard. However, the Environmental and Public Protection Cabinet was successful in providing sufficient justification avoiding designations that would have impacted every county in a metropolitan statistical area if even one monitor showed a problem.

Kentucky will now have eight counties designated as not meeting the standard. They are Boone, Campbell, and Kenton counties in northern Kentucky; Boyd (Ashland), Bullitt, Christian County (Hopkinsville), Jefferson and

Oldham counties.

The EPA is behind schedule on releasing implementation guidance that will provide a road map for states to follow to develop plans to bring these areas back into compliance with the standard and allow them to maintain that standard. Once that guidance is released, the Division for Air Quality will be working with the local communities to develop air quality plans that make the most sense for each area.



8-Hour Ozone Standard Anticipated Nonattainment Counties



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