

# NewsStreams



A publication of Kentucky Waterways Alliance: Working to protect and restore Kentucky's waterways.

## EPA Fails in Selenium Decision

The US Environmental Protection Agency (EPA) has been dragging its feet on proposing revised standards for selenium. Kentucky Division of Water (KDOW) chose not to wait on EPA, and, this past year, proposed to revise Kentucky's specific standards for selenium. Why is this important?

For surface coal mining operations, the adjacent valleys are often filled with the unused rock and soil material, often called "spoil." This material contains coal dust and significant traces of heavy metals and other pollutants. Once exposed to the elements, especially to the hydrologic cycle of rainfall and percolation into the soil structure, these valley fills often leach various pollutants, like selenium, into the surface and groundwater flow and into the local creeks.

### Mined High Selenium Coal Seams in Eastern Kentucky

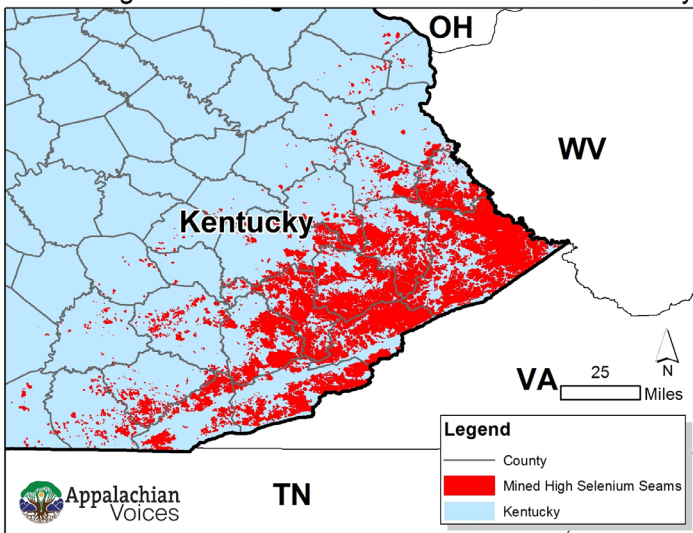


Image courtesy of Appalachian Voices

Selenium (and other toxic pollution from valley fills) is a major problem for headwater streams in Appalachia. Kentucky, according to the USGS, has higher average concentrations of selenium in our coal seams than any other Central Appalachian state. High concentrations of selenium in places where mountaintop removal mining happens means that selenium is getting into our waterways. Despite these high concentrations, KDOW has only identified 1.5 miles of stream impaired by selenium.

Left with no leadership from the EPA, KDOW developed its own selenium standards. If you'll recall, KDOW proposed to change the acute limit for aquatic habitat from 20 micrograms per Liter ( $\mu\text{g/L}$ ) to 258 micrograms per Liter ( $\mu\text{g/L}$ ), and proposed to change the chronic limit (based on the monthly average of water samples) from 5 micrograms per Liter ( $\mu\text{g/L}$ ) to a new method that utilizes that

same number as a trigger to conduct fish tissue tests. If triggered, the fish tissue concentration must be below 8.6 micrograms per gram ( $\mu\text{g/g}$ ), and if it is above that concentration, then the stream is impaired and the mining operation will be considered non-compliant.

KWA and our organizational partners would argue that these standards are based on questionable science. Unfortunately, on November 15th, EPA sent a letter to KDOW detailing their decision to approve the chronic proposal and disapprove the acute proposal. The result will allow harmful levels of selenium to continue to find their way into our waterways.

So, what does all of this mean?

In terms of the disapproval of the acute change, EPA has told KDOW to rework the acute proposal to include a relationship with the chronic fish tissue criteria. EPA believes doing so will more accurately reflect the impacts of short-term pollution pulses to the long-term aquatic habitat.

With the acute criterion intact, monitored streams with a selenium reading above 20  $\mu\text{g/L}$  will continue to be considered out of compliance.

The change in the chronic standard will have multiple repercussions. First, it means that instead of penalizing a polluter when selenium levels are consistently or regularly above the 5  $\mu\text{g/L}$ , the polluter is allowed to test fish tissue content to determine if fish tissue has reached a significant accumulation of selenium. If the fish tissue is below the approved limit, then the polluter is 'OK' or 'in compliance.'

Secondly, the change in the chronic standard leads to a question in the enforcement of the standard. In communications between KDOW and EPA, as well as with stakeholders and citizen organizations, the question was raised repeatedly as to how this standard would be enforced if the receiving stream or waterbody did not have any or enough fish to test. KDOW's response to that question was that it was an issue of implementation and enforcement via the permitting program, and not an issue of justification for the change in the water quality standard. But the EPA also had questions on this issue. Ultimately, KDOW did confirm that if the 5  $\mu\text{g/L}$  chronic standard trigger is exceeded, but fish are unavailable and fish tissue concentrations cannot be determined, then the trigger would then serve as the permit limit. So, if the chronic limit is exceeded and no fish are present to test, then the polluter would be considered in violation at that point. This clarification by KDOW to the EPA at least partially addresses a major concern on the chronic change.

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## Message From the Director

### Giving Thanks

As this year draws to a close, I am reminded of the many things I have to be thankful about. Leaving aside the many things I am thankful for in my personal life – family, friends, health, happiness and a sense of fulfillment, there are many things in my professional life for which I am grateful.

I am grateful for a wonderful professional staff that is pushing KWA to be better, bigger, and more effective. I am grateful for dedicated members – **like you** – that support us and enable us to do our work. I am grateful that KWA has so many active, engaged, and knowledgeable partners to work with across the country. And I am grateful that we have a board who is committed to Clean Water and often dedicates themselves to years of KWA service.

In 2012, the Clean Water Act turned 40 years old, and this year KWA celebrated our 20th anniversary. It's hard to believe that after decades of work, we still have significant water pollution problems in Kentucky and the nation. It's even harder to believe that we are still fighting things like mixing zones for mercury discharges into the Ohio River and a state agency that seeks to increase the allowable amount of toxic selenium into our rivers and streams by twelve fold.

The goal of the Clean Water Act was to clean up the nation's waters such that they would all support activities like fishing and swimming by 1983. Oops – I think we missed that goal. The Act also set a national policy to prohibit the discharge of toxic pollutants in harmful amounts – read that as prohibiting things like mixing zones for mercury. Oops – I think we missed that goal, too.

So why are we still fighting these battles in 2013? Because rather than actually eliminate the discharge of pollutants, the EPA created a permit system that legalizes the discharge of pollutants into our waters. This could be attributed to big corporations having way too much money for fighting actions that seek to reign in their discharge of toxins into our waters.

Make no mistake – the Clean Water Act has been and continues to be an incredibly effective legal tool. But it's 40 years old and some of our water pollution problems have changed. We need a renewed commitment to Clean Water in our state and our nation – and that's where you come in. Please renew and redouble your efforts for clean water. Tell your elected officials that our clean water isn't for sale. Tell your friends and family about your KWA membership – better yet, give them the Gift of Clean Water this holiday season by taking advantage of our 2 for \$20 gift membership deal.

My staff, board and I promise to do our part – please help do what you can! I'll be ever so thankful.

On behalf of a healthier Kentucky,

*Judy Petersen*

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**Visit our website at**

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## Show Us Your Town Branch - Annual Meeting a Success!

KWA's 2013 Annual Meeting, a celebration of our 20th year protecting and preserving Kentucky's waterways, was held at the Bell House in Lexington, KY on November 16th.

Alltech graciously sponsored our event by providing Kentucky Bourbon Barrel Ale and the aptly named Town Branch Bourbon.

We were joined by two guest speakers. Charlie Martin, Director of Lexington's Division of Water Quality, gave his perspective on Lexington's trend-setting Stormwater Incentive Grant Program. Instead of following the typical credit-based program models, which rarely result in water quality improvement actions, this Lexington program builds the capacity of the sanitary sewage system by supporting on-the-ground projects in communities that result in measurable water quality improvements.

Our second guest, author Jason Howard, read an excerpt from his book "A Few Honest Words." He gave a unique perspective on how water connects our lives - both spiritually and physically, and reminded us that "what we do to the water, we do to the people."

Thanks to everyone who joined us for this memorable event!



## KWA Volunteer of the Year - Ruth Billings

KWA certainly gets a lot done with only six employees. How do we do it? With the help of some fantastic volunteers, of course!

This year, one volunteer stands out above the rest for her tireless effort and enthusiasm: Ruth Billings. Ruth has been coming to our office at Bakery Square every Thursday morning for the last year. She has taken on projects ranging from stuffing envelopes to helping us plan our gala this past June and securing numerous silent auction items. Ruth always shows up at our office with an infectious smile, ready to tackle whatever we throw her way. Thanks, Ruth, from all of us!

*We interrupted Ruth while stuffing end-of-year appeal envelopes just long enough to give her this fantastic book as a thank you, Kentucky's Natural Heritage: An Illustrated Guide to Biodiversity.*



## Bacon Creek Watershed Council and KWA win new grant!

By Tessa Edelen, Watershed Program Director

The Bacon Creek Watershed Council and KWA are proud to announce that our proposal for installing Best Management Practices (BMPs) in the watershed has been chosen for funding! The grant funding will come from the KY Division of Water and the KY Division of Conservation to address nonpoint source pollution in Kentucky communities. This project will enable us to continue our work to make the creek cleaner and safer.

The Bacon Creek Watershed Council has worked to improve the quality of the creek for many years and recently completed an update of the watershed-based plan. As part of a watershed-planning project, the watershed is studied and then BMPs are recommended to address specific water quality issues based on the information in the watershed plan.

Recent water quality data indicate that the biggest problems facing the creek



One of many septic replacements performed under the previous Bacon Creek 319 grant. The new grant cycle will enable many more septic fixes that help clean up Bacon Creek.

today are loss of stream side vegetation and bacteria originating from failing septic systems and agricultural operations. Working with home owners and farmers in the area, BMPs like septic tank pump outs and cattle exclusion fencing will be implemented in strategic areas to clean up the water and create better habitat.

Section 319 of the Clean Water Act is meant to help communities deal with nonpoint source pollution – that is, pollution that does not come from a specific point. It is also often called runoff pollution. Each year, there is an open call for proposals through the KY Division of Water to receive grant funding. These grants require a forty percent match, which can be cash or in-kind donations. KWA has been working with the KY Division of Water for almost twenty years through this program to effect real change in Kentucky's communities.

## Karst Country

By Tessa Edelen, Watershed Program Director

Much of Kentucky is “karst” country. If you’re from around here, you’ve probably heard the word and maybe been to one of the world’s largest karst features - Mammoth Cave National Park. What does karst really mean, though?

“Karst” is a funny word. It is used to describe topography, but also specific landscape features. It is derived from a Slavic word that means “barren, stony ground” (Currans 2002). Here are some important things to know about karst:




- Landforms produced primarily through the dissolving of rock, such as limestone, are known as karst.
- Features of karst landscapes include caves, sinkholes, large springs, blue holes, and sinking streams.
- Karst landscapes are connected with extensive groundwater systems.
- Many Kentuckians rely on karst systems for their drinking water.
- Groundwater flows do not always travel the same way in which surface water travels.

- Caves above the water table are tributaries to caves below the water table.
- Approximately 25% of Kentucky is known to have well-developed karst features, and about 55% is underlain by rocks that could develop karst, given enough time (Currans 2002).

Because groundwater and surface water are closely connected in karst systems, it’s really important to keep the water clean. Once groundwater is contaminated, it can be very difficult to clean up. You can go to the Kentucky Geological Survey website to find out more about karst near you!

(Sources: Kentucky is Karst Country by James C. Currans, 2002 and Living with Karst prepared by the American Geological Institute, 2001.)

### Potential for karst development

-  High
-  Moderate
-  Limited

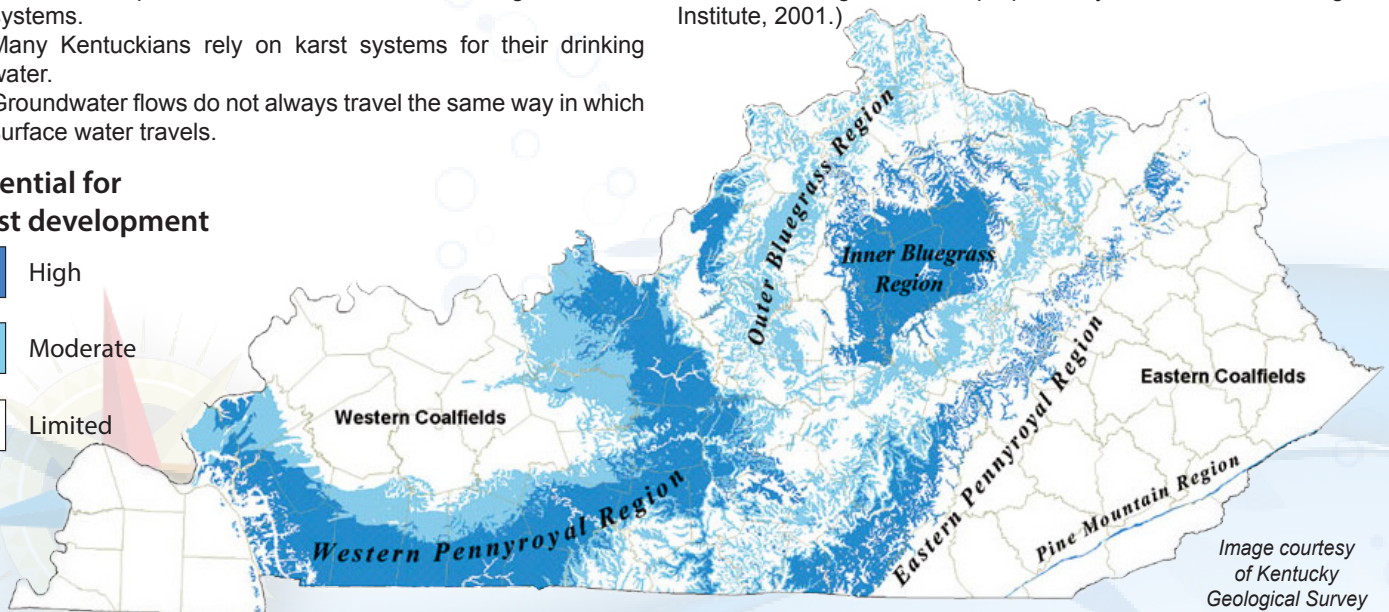


Image courtesy of Kentucky Geological Survey

## KWA Works Every Day on Behalf of Our Families for Clean Water POLICY... IN BRIEF: what we're doing to protect your water resources

By Tim Joice, Water Policy Director

KWA is your voice in the fight for clean water in Kentucky! Find out what we've been doing lately on behalf of the health of our waterways and communities.

### Harmful Algal Blooms

If you hadn't noticed, we have a major nitrogen and phosphorus pollution problem throughout the Mississippi River Basin. KWA has been working for several years to get Kentucky Division of Water to propose numeric water quality standards for nitrogen and phosphorus. Currently there are *none*. We've been working with our Mississippi River Collaborative partners to get the U.S. Environmental Protection Agency to take this issue and the resulting Gulf of Mexico Dead Zone more seriously. The Collaborative groups have even petitioned and sued EPA to force EPA to give a legitimate reason why they cannot propose numeric criteria for even some of the states in the Mississippi River Basin. Why?

Excessive nitrogen and phosphorus can lead to potentially toxic algal blooms, which can cause fish kills and sickness in humans and pets. The Army Corps of Engineers calls these "harmful algal blooms" for that very reason. Technically, these blooms are cyanobacteria.

For years now, most of the other states in the Mississippi River Basin have experienced very significant algal blooms each summer, with stunning visuals of green gunk as evidence. But what about Kentucky? Well, according to state officials, we did not have those problems. And yet, Kentucky is known to contribute roughly 5-10% of both the nitrogen and phosphorus pollution that results in the Dead Zone. From our standpoint, we felt like we did have a problem.

Finally, this past summer the Army Corps of Engineers began testing lakes for cyanobacteria, or blue-green algae. Lo and behold, they discovered that Barren, Rough, Nolin, Taylorsville, and Green reservoirs all had cyanobacteria levels that were above the World Health Organization's "Moderate" health risk. Coincidentally, the Kentucky Division of Water also decided to do some testing of their own, and found more toxic algal blooms at additional lakes in Kentucky. It seems Kentucky has nutrient pollution problems, after all.

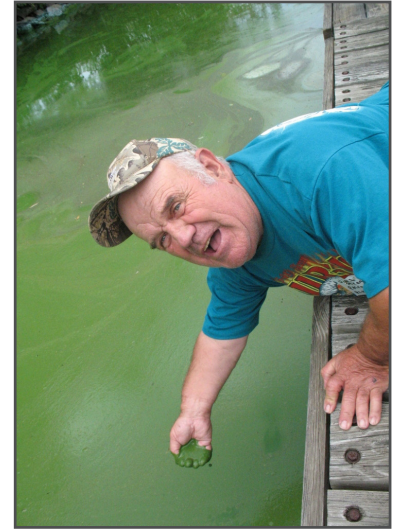
### Trimble KPDES Win

In September, KWA and several partner organizations were victorious in a court case against Kentucky Energy and Environment Cabinet (EEC) and Louisville Gas & Electric (LG&E) for an insufficient permit at LG&E's Trimble Generating Station. The



Image from [www.lge-ku.com](http://www.lge-ku.com)

Research studies by the U.S. Department of Agriculture (USDA) and the U.S. Geological Survey (USGS) have shown that agriculture, including row-crop, animal feeding operations, and pasture, contribute the most substantial amount of nutrient pollution to the Dead Zone. But the second leading cause of nitrogen and phosphorus pollution is human/urban sources. This includes facilities with permitted wastewater discharges, like wastewater treatment plants. These facilities are required to adhere to water quality standards. This means that they are only allowed to discharge wastewater that is treated to remove certain amounts of pollutants. **And therein lays the problem: without a numeric standard for phosphorus and nitrogen, the state inconsistently applies limits on these two pollutants for some permitted facilities.**



*Our upstream friends in Wisconsin have a persistent harmful algal bloom problem. Left unchecked, Kentucky's waterways could begin to look like this!*

With the recent tests confirming the existence of harmful algal blooms in our lakes, and the understanding that the nutrient pollution to those lakes originates in our streams, it is time for Division of Water to propose numeric criteria. We will continue to fight for the adoption of such standards.

Trimble station had received a permit in 2010 from the EEC that covered the facility's scrubber waste and settling pond discharge. The permit had no limits on the heavy metals known to be in the discharge like arsenic, mercury, and selenium, allowing the toxic coal waste to discharge into the Ohio River! The facility discharges into the Ohio upstream of Louisville's drinking water intake.

The court ruling has forced the state to redo the permit and conduct an analysis called "best professional judgment," to ensure the permit has sufficient limits on the all of the pollutants that will be discharged. It also requires the state to evaluate the best available technologies to treat the waste when establishing the permit limits for the generating station. There are other similar permits without limits on these toxic metals in Kentucky and across the nation. You can count on our using this win to affect further changes, protecting our rivers and streams. This is a big win for the water quality of Kentucky's streams and rivers, and we all have reason to celebrate!

## POLICY... IN BRIEF: continued...

### Fracking Wastewater

Recently, the U.S. Coast Guard proposed a policy that sets the basic procedural steps to allow for shale gas extraction wastewater, or “fracking” wastewater, to be barged on our inland waterways. This includes a possibility that the Coast Guard could and would request a list of the chemicals in fracking wastewater, which is currently considered “proprietary” information by fracking companies and therefore protected from disclosure under the Freedom of Information Act.

The Ohio River provides drinking water for over 3 million people. Further downstream, the Mississippi River is a drinking water source and agricultural source for many millions more. With oil and coal barges already putting these critical waterways at risk, do we really need to add the radioactive concoction of fracking wastewater to the list? I'd like to think not.

The Coast Guard's public comment period recently closed but stay tuned for further developments. Make sure to stay on top of pending issues by signing up for KWA's e-Notifications on our website: [www.KWAlliance.org](http://www.KWAlliance.org)



Image of stream crossing from [www.lindeco.com](http://www.lindeco.com)

### Bluegrass Pipeline Update

The Bluegrass Pipeline project proposes to move Natural Gas Liquids from Ohio and Pennsylvania down to processing facilities in Gulf of Mexico states. Concerned citizens throughout the counties likely to be affected have continued to meet on a regular basis to discuss problems, concerns, and activities of the companies involved. Given the continued concern regarding eminent domain abuse, the citizens have chosen to come together and form a non-profit organization, called Kentuckians United to Restrain Eminent Domain, Inc., (KURED), or KURE for ED, to properly confront the issue.

In addition to this effort, a petition has been circulating to formally request the Army Corps of Engineers to develop a full “EIS,” or Environmental Impact Statement, for the pipeline. An EIS is an analysis that can be required under the National Environmental Policy Act for certain activities that might have significant impacts to the human environment. Typically, an EIS would include a discussion of the full spectrum of direct and indirect impacts to human and environmental health, and reasonable alternatives that would avoid or minimize such impacts.

The Corps can initiate the development of an EIS after they receive a Clean Water Act Section 404 Permit application from the pipeline company. KWA strongly believes this project needs a full EIS as well. Once the Corps has received the permit application, we will both review the application and prepare comments, but will also formally request the Corps to prepare the EIS, and we'll call on all our members to support that effort!



This is a hydraulic fracking wastewater pit used to store waste until it is transported by pipe or truck to a disposal site. The US Coast Guard is considering options for allowing this toxic soup to travel on our national waterways.

### KWA Awarded Mayerson Student Philanthropy Project Funding

KWA is the proud recipient of a 2013 Mayerson Student Philanthropy award, to be used in early 2014 for a stream cleanup in northern Kentucky. We were chosen by the students of Assistant Professor Kristy Hopfensperger's ENV 220 - Protecting Water Resources class and were given the opportunity to speak to the class about the importance of our work.

The Mayerson Student Philanthropy Project started at Northern Kentucky University in 1999 as a way to teach students more about nonprofits and philanthropy, with the belief that hands-on learning in these fields would produce graduates who are more likely to remain life-long community stewards.



Every semester select university courses are named Mayerson courses, and students are asked to evaluate nonprofits and then invest in those they think will make the most effective use of the funds (typically, \$1,000 per nonprofit).

Stay tuned to our website and upcoming emails for details about the project!

...Continued from selenium cover story

Third, similar to many heavy metals, selenium is necessary for life at small levels but becomes toxic at higher levels, and it bioaccumulates as it travels up the food chain. This means that, even at lower levels, selenium can build up in organisms and cause adverse physiologic effects. The daily discharges could stay below the chronic trigger, but fish could still be accumulating selenium to significant levels



Fourth, the added complexity of the new chronic testing method raises a number of concerns:

- the Division of Water, whose job it is to enforce these new standards, is already understaffed and underfunded
- the proposed standard is difficult to implement and virtually unenforceable
- under the Clean Water Act, citizens are encouraged to take action to protect their water resources, and fish tissue sampling makes it virtually impossible for citizen participation
- if high levels are discovered in fish tissue it will likely be too late to reverse the damage because it means that the contributors to the problem, such as valley fills, are fixed in the landscape and difficult to remediate
- if non-compliant, offenders will be equipped with valid legal arguments such as proximity of sampled fish or neighboring mining operations to share the blame

Fifth, the unfortunate reality is that West Virginia, among other Appalachian states, has been waiting on this decision in order to

put forward their own proposal. It's all but certain they will follow suit and propose something very similar.

Overall, we are disappointed. The goal of the Clean Water Act is to eliminate pollution from our waterways—not to permit the step-wise pollution and degradation of the water quality and habitat of our waterways. EPA's decision to approve the chronic standard is in direct contradiction of its mission and extremely disheartening, considering that the numbers for fish tissue limits are higher than EPA's own recommendations from 2004, which were debated heavily by the scientific community and rejected. But at least EPA clearly saw that the magnitude of the increase in the acute standard as problematic and not fitting within the overall relationship with the chronic standard.

Additionally, EPA's previously proposed selenium standard was withdrawn after outside peer review. KWA and our colleagues requested several times that EPA specifically have KDOW's proposed standards undergo external peer review from experts on selenium, but EPA chose to move forward without the external peer review. We continue to hold that external peer review would bring to light the specific concerns we have had with this proposal from the beginning.

However, this is a larger problem than just selenium. The regulations put in place by our government determine how and to what level our resources are exploited. The damage done is virtually irreversible. With coal mining jobs and production steadily declining since the early '80's, there has been lots of talk about how to revitalize our eastern Kentucky economies. One of the most promising options is to bring eco-tourism to these areas that would draw attention to the fantastic natural resources. Accepting lax environmental protection standards puts eastern Kentucky future at further risk and limits the economic options for the inevitable life after coal.

## Upcoming Events

**Dec 18 Deadline for Gift Membership Recipients to get notification before Christmas Day** Give the gift of clean water this holiday season!

**Dec 31 Deadline for 2 for \$20 Gift Memberships** Until the end of the year, KWA is offering gift memberships at the low price of 2 for \$20! Fill out the form on the back of this newsletter or go to [KWAlliance.org](http://KWAlliance.org) today!

**Jan 23 Teaching Youth About Climate Change** From 9:30-3 pm at the Kentucky State University's Center for Sustainability of Farms and Families in Frankfort, come learn about climate change, its causes, and how you can support youth in becoming empowered to care for the planet

**Feb 1 KY River Watershed Watch Annual Conference** will be on Saturday, February 1, 2014 in the Piper Dining Hall at Midway College. Begins at 9 am.

**Feb 15 Licking River Watershed Watch Annual Meeting** will be held from 10 am to 3 pm at the Gateway Regional Arts Center in downtown Mount Sterling, KY. Lunch

will be served. For more information, please visit [www.lrww.org](http://www.lrww.org)

**Feb 16 Backyard Wildlife Habitat Program** Learn about the steps needed to provide food, water and nesting material for the wildlife you already have or hope to attract.

**Feb 20-21 Green River Summit** KWA, US Army Corp of Engineers, and The Nature Conservancy will host peers, government agencies, and experts to share ideas and build synergy around protecting this incredibly biodiverse treasure to Kentucky and the nation. The event will be held at Mammoth Cave National Park. Make your reservation today!

**March 15 Wild & Scenic Film Festival** Once again held at the Clifton Center in Louisville, "EmPOWERment" will be the theme of this year's festival highlighting films about fracking, energy (nuclear, solar, wind, and hydrologic power), and human empowerment.

**May 30 - June 2 River Rally** Pittsburg, PA will host the Waterkeeper Alliance and River Network for the annual River Rally - always a great time!



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Address: \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone: \_\_\_\_\_ E-mail: \_\_\_\_\_

Recipient 1: \_\_\_\_\_

Address: \_\_\_\_\_

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Telephone: \_\_\_\_\_ E-mail: \_\_\_\_\_

Recipient 2: \_\_\_\_\_

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