

## Many hands



## make light work!

(Top L-R) Top row left to right Greg Williamson, Chuck Oglesbee, Sherri Williamson, Drew Claar, (Bottom L-R) Joe Schafer, Marian McGuire, Dr. Harold Benson and Lori Davis.

Successful community service depends upon passion and initiative - something that Xerox people around the world but especially in Frankfort clearly possess. Xerox employees volunteer in a wide variety of ways to help their community. At the EEC, the Xerox Foundation was kind enough to donate funds to purchase materials for two teaching platforms one of which was built by Xerox employees themselves. In addition to doing a world of good, these activities support one of the core values Xerox has upheld since its inception: *"We behave responsibly as a corporate citizen."*

The Kentucky Ready Mixed Concrete Association (KRMCA) generously donated 14 cubic yards of pervious concrete, and installed a path connecting the parking area to the lower level of the teaching platform by the pond. In the photograph to the left: Alan Vaesa, Randy Carpenter, and Robert Hastings from the KRMCA assisted the father and son team from HPW contracting, who all worked together to build a beautiful trail.



In the woods, it is profoundly true that when many hands and minds work together contributing on a common goal; the final product will be exponentially superior to a task completed by an individual. The staff at the EEC truly appreciates the extra effort put forth from the KRMCA and HPW Contracting in completing the ADA compliant trail (below).



Pervious concrete paving mimics natural ground cover by filtering water through the surface. Pervious concrete can pass 3 to 5 gallons of water per minute through its open cells for each square foot of surface area, which is far greater than most rain events. This system reduces or eliminates storm water runoff and replenishes groundwater. Using little or no sand in this mixture creates an open cell structure that allows storm water to filter through the pavement and into the underlying soils or act as a retention area while helping to protect our environment. The pervious concrete is comparable in price and is aesthetically pleasing for natural looking areas. In many cases constructing handicapped accessible trails do not coincide with environmentally friendly construction methods. The pervious concrete was praised for its ability to offer traction to wheelchairs by a representative from the Disabilities Coalition of Kentucky.

The good folks from Irving Materials Inc. (IMI) were kind enough to facilitate the transportation of fourteen cubic yards of pervious concrete and patient enough to guide HPW contracting through the installation process and make sure everything was done to specifications. Yet another fine example of many individuals working together on a common goal; and when the task is complete everyone including contractors, staff, donors, and even the forest looks back at a job well done, a project completed with pride.



## The Xerox Community Involvement Project (adventure)



And so it began, the Xerox Community Involvement Project (XCIP) funded by the Xerox Foundation. On a cool Saturday in November, many eager Xerox employees converged at the EEC, armed with work belts supplied by Lowe's and a desire to improve the environmental education opportunities for all members of the Commonwealth.

In the photograph to the right carpenters worked through a not so square base. For the record: setting posts by the lights from a Chevy is generally not the most accurate option. Fortunately, the carpenters working for Xerox XCIP were able to construct a beautiful teaching platform.



While the majority of the Xerox volunteers worked on the teaching platform, others treated the pavilion. Great care was taken in the task, and as a result the wood has a rich color and is water resistant.

Lori Davis, Field Managers/Managed Services, right encountered the Giant Puffball, *Calvatia gigantea*. The species is found throughout the EEC. Larger specimens can be found, but this was the largest one found in this particular patch.





The staff at the EEC would like to take this opportunity to thank Mrs. Marian McGuire, Account Associate, if it were not for her hard work and fortitude the XCIP day would have not been possible. Marian was responsible for bringing together XCIP and the EEC. It is the hope of the staff of the EEC that this will be the first of many XCIP projects.



In the photograph to the left are Mr. and Mrs. Greg Williamson. Greg, Field Manager/Managed Services, brought his wife along to enjoy a day in the great outdoors. It just goes to show how determined the XCIP participants were by bringing family members who shared their eagerness to improve the learning opportunities for individuals with disabilities in the Commonwealth.

Joe Schafer (left), Customer Service Engineer and carpenter extraordinaire, enjoyed a cold beverage as the sun set on a hard days work. Without Joe's expertise the teaching platform would not be the work of art that it now is.





In the picture to the left enjoying a well deserved lunch break is Chuck Oglesbee, Customer Service Engineer. Chuck also displayed great carpentry skills and determination throughout the day.



Drew Claar is pictured to the right making some precision cuts. Drew became very familiar with the chop saw and the nail gun by the end of the day.



The beginning of the day the XCIP volunteers started with not very much (above). By the end of the day through hard work, determination, and skill the EEC received a 8' X 16' teaching platform. The staff from the EEC sincerely appreciates all of the hard work completed by the XCIP volunteers!



The staff at the EEC appreciates the new friends made during this volunteer effort and looks forward to next years Xerox XCIP adventure.

## News from the EEC

The Whitney Young Honor Students visited the EEC and enjoyed a three mile hike investigating different habitats learning a little about dendrology. The hikes main focus was on the historical aspects of the land and how it was used. Dr. Thomas McPartland, Director of the Whitney Young School of Honors and Liberal Studies (right), led the group on a fascinating adventure.



Students from Second Street School of Frankfort Independent School System visited the EEC to explore the various aquatic ecosystems. Students enjoyed a full day at the EEC, and had transportation costs covered by an USDA grant. Visits to the EEC are unique to each visitor. Botanist, entomologists, graduate students, and kindergarten students each perceive the day differently. Sydney pictured to the left had a different set of questions and observations, because she is visually impaired. Sydney received the same educational opportunities as every other student present on this educational field trip.

Chase Weibel member of a Frankfort Boy Scout Troop put in some community service hours at the EEC. Chase spent a day in the woods posting an abbreviated version of the rules. Chase attached the signs on trees along the perimeter of the property. Chase put in a full days work EEC style, without breaks, fifteen minutes for lunch, and no complaints.



# Research at the EEC

Examining the Health of Six Mile Creek Using Water Quality  
and The Fish Index of Biotic Integrity  
as part of Dr. Sluss's Aquatic Ecology Class (AQU-513)  
by Kimberly Trosvik

Kentucky constitutes a major part of the drainage basins for the Kentucky River and the Ohio River, and has an estimated 140,000km of streams. These water ways provide recreation, transportation, and drinking water for humans, and support both terrestrial and aquatic ecosystems in Kentucky. Over time, Kentucky has become increasingly urbanized, creating possibilities for non-point pollution. To prevent this, stream monitoring in the form of sampling and assessment using biological indices are prudent.

One biological index in use is the fish index of biological indices (IBI) that was proposed by Karr in 1981 (KDOW 2002). The fish IBI is based on the wide variety of ecological niches different species of fish occupy. The presence of a certain species of fish can indicate that environmental conditions are optimal and proper habitat is available for that species growth and reproduction. For example, the presence of several insectivorous species of fish would indicate that there are enough aquatic insects in the area to sustain that fish population. Certain species of aquatic insects are indicators of good water quality.

The fish IBI uses values of metrics that were grouped into three categories: species richness and composition, trophic composition, and fish abundance and condition. These values are used to calculate an overall IBI score that can range from 12-60. Metric values are calculated from data obtained from stream fish samples. Since stream fish populations vary with geographic location, metrics must be changed to maintain the accuracy of the IBI score (Fausch, Karr and Yant 1984). In Kentucky, there are seven metrics used: 1) richness of native species, 2) richness of darter, madtom and sculpins, 3) richness of intolerant species, 4) proportion of individuals as insectivores, 5) proportion of individuals as tolerant species, 6) richness of simple lithophilic spawning species, and 7) proportion of individuals as facultative headwater species. According to criteria developed by Kentucky Division of Water, each metric is scored (0-100), and then are summed and averaged, producing the final IBI score (KDOW 2002).

The objective of this study was to investigate the health and biotic integrity of Six Mile Creek using electroshocking, seining and the fish index of biotic integrity.



Figure 1. One person is needed to operate the backpack electroshocker (left), and several more people are required to net stunned fish from the water (right).

## Results

A total of seventeen different species of fish were caught by electroshocking and seining. Fish that were caught by electroshocking included species in the groups Cyprinidae, Catostomidae, Percidae, Ictaluridae, Clupidae and Centrarchidae. Fish that were caught using a seine were predominantly minnows and darters (table 1). Water quality parameters were within optimal ranges for the region (table 2). Metrics scores were as follows:

1. Richness of native species	17
2. Richness of darter, madtom and sculpin species	2
3. Richness of intolerant species	0
4. Richness of simple lithophilic species	4
5. Percent insectivores	55
6. Percent tolerant individuals	28
7. Facultative headwater individuals	96

These metrics yielded an IBI score of 46 which is considered 'good' for the inner bluegrass plateau.

Table 1. Fish species with common names and number caught for each sampling method

Scientific Name	Common Name	Number of Fish
<b>Electroshocking</b>		
<i>Micropterus dolomieu</i>	Smallmouth Bass	13
<i>Micropterus punctylatus</i>	Spotted Bass	2
<i>Ambloplites rupestris</i>	Rock Bass	10
<i>Dorosoma cepedianum</i>	Gizzard Shad	1
<i>Lepomis cyanellus</i>	Green Sunfish	9
<i>Lepomis macrochirus</i>	Bluegill	4
<i>Lepomis megalotis</i>	Longear Sunfish	29
<i>Moxostoma erythrurum</i>	Golden Redhorse	9
<i>Catostomus commersonii</i>	White Sucker	3
<i>Campostoma anamalum</i>	Stone Roller	14
<i>Ameiurus natalis</i>	Yellow Bullhead	2
<i>Hypentelium nigricans</i>	Northern Hogsucker	5
<i>Etheostoma blennoides</i>	Greenside Darter	9
<b>Seining</b>		
<i>Notropis stramineus</i>	Sandshiner	1
<i>Pimephales notatus</i>	Bluntnose Minnow	28
<i>Etheostoma flabellare</i>	Fantail Darter	2
<i>Lythrurus fasciolaris</i>	Scarlet Shiner	22

## Discussion

The region of Six Mile Creek that was sampled was in good condition, with little pollution and good fish populations. However, this conclusion can only be applied to the sample time it was taken. Streams and rivers are an ever changing environment, and so regular sampling is required to have any long term view of stream health.

### Literature Cited

- Fausch, K.D., J.R. Karr, and P.R. Yant. 1984. Regional application of an index of biotic integrity based on stream fish communities. Transactions of the American Fisheries Society, vol. 113, pp. 39-55
- Fondriest Environmental, Inc. 2007. [www.fondriest.com](http://www.fondriest.com)
- Kentucky Department for Environmental Protection Division of Water. 2002. Methods for assessing biological integrity of surface waters. [www.water.ky.gov](http://www.water.ky.gov)

# Kentucky State University

## Summer Environmental Education Workshop for Middle & High School Teachers

*This U.S. Department of Agriculture funded workshop is designed to provide training to teachers to incorporate environmental topics/issues in their school curriculum.*

### **Suburban and Urban Ecology: The Backyard and Beyond**

*Exploring habitat fragmentation, sprawl, and invasive species*

This workshop will:

- Cover the ecological principles related to habitat fragmentation and sprawl.
- Introduce the urban/suburban heat island effect, its connection to our use of conventional energy and alternative forms of energy.
- Investigate humans as facilitators of invasive species.
- Use GIS applications to map invasive species, measure remnant forest patches, and plan corridors for habitat connectivity.
- Include field GPS and sampling activities that will be integrated with technology.
- Participants will receive GPS receivers and a field sampling kit.
- Provide connections to the Kentucky Program of Studies and strategies for incorporating environmental science in the classroom. Group presentation of data using Power Point.
- Please note that some field work required as part of this workshop

**July 7 - 11, 2008**

### **The Benefits:**

**Stipend \$900 (\$180/Day including travel)**

**Plus a complete equipment/materials kit.**

**Follow up one day workshop in the Fall (\$200 stipend)**

### **Application Criteria:**

Full time Kentucky middle or high school science teachers.

Completed application & a letter from school administrator.

We encourage applications from KSU service area teachers,

last years participants, and schools serving minorities.

Electronic application is preferred. Applicants will be notified via e-mail only.

**Application deadline is April 15, 2008.**

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*Interested in the Summer Teacher Workshop at KSU? Contact:*

Dr. Kazi Javed  
130 Carver Hall  
Kentucky State University  
400 East Main St.  
Frankfort, KY 40601

[kazi.javed@kysu.edu](mailto:kazi.javed@kysu.edu)  
Phone: 502-597-6722  
(We can accommodate persons with disabilities)

Kentucky State University  
SUMMER ENVIRONMENTAL EDUCATION WORKSHOP  
FOR MIDDLE & HIGH SCHOOL TEACHERS  
July 7, 2008 – July 11, 2008  
APPLICATION FORM

Name: \_\_\_\_\_ e-mail: \_\_\_\_\_

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

Telephone: (Home): \_\_\_\_\_ (Work/Cell): \_\_\_\_\_

Teaching Area/Subjects: \_\_\_\_\_

School Name: \_\_\_\_\_ County: \_\_\_\_\_

*Please describe below how this workshop will benefit you and your school (use additional page if necessary):*

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Please enclose one letters of recommendation from school administrator.

**Application deadline is April 15, 2008.**

Mail (or e-mail) Application to:

Dr. Kazi Javed  
130 Carver Hall  
Kentucky State University  
400 East-Main Street  
Frankfort, KY 40601  
(502)597-6722  
[Kazi.javed@kysu.edu](mailto:Kazi.javed@kysu.edu)

Criteria for Application:

- 1) Ky. middle or high school science teacher
- 2) Completed application
- 3) One reference letter

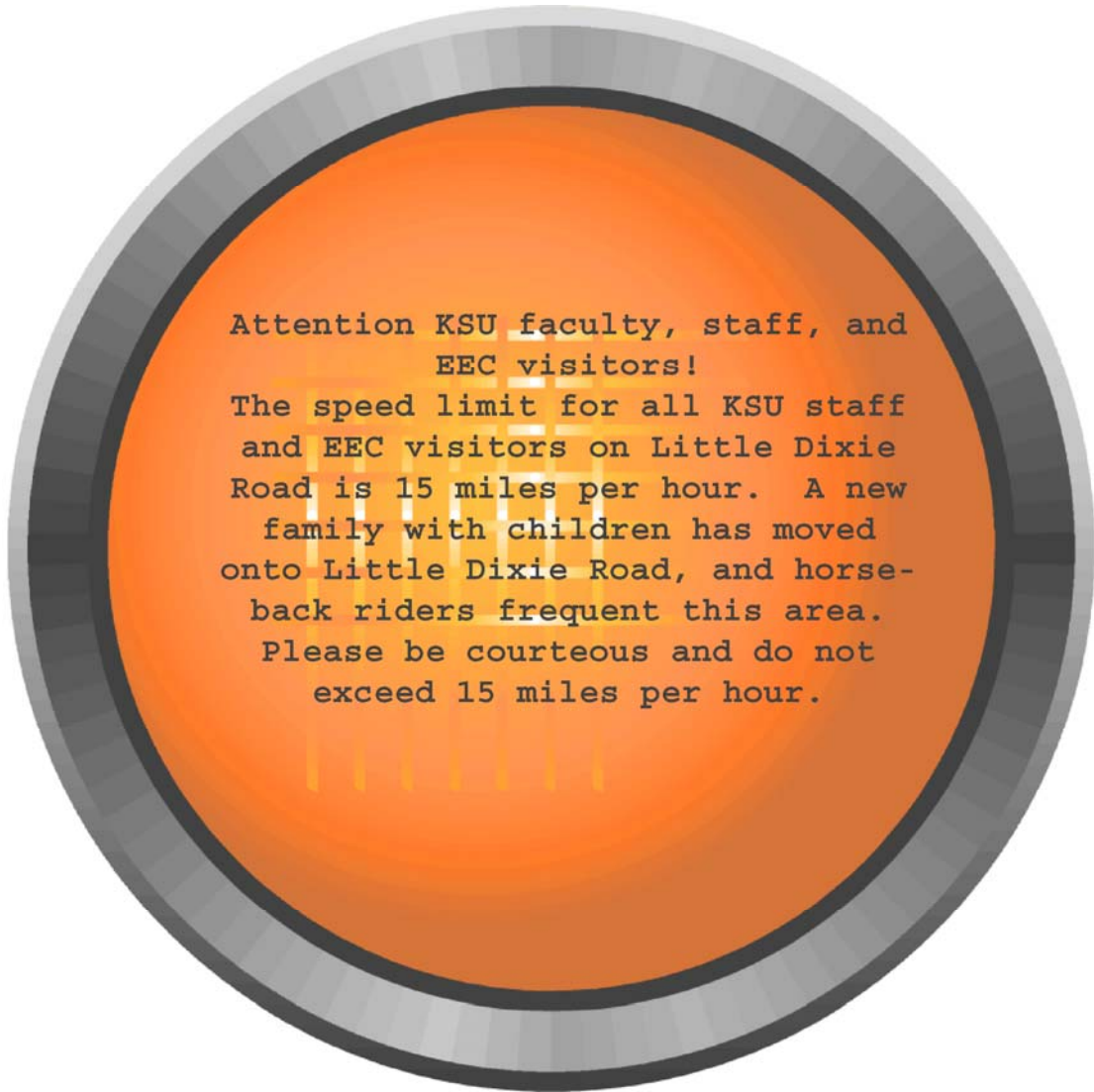
Applicants will be notified via e-mail only.

THE BENEFITS:

Stipend \$900 (\$180/day)

One day Fall follow-up workshop (\$200)

# Caution



# Caution

# Project WILD Aquatic / Project WILD Workshops

**Contact:** [venita.bright@ky.gov](mailto:venita.bright@ky.gov)

**Location:** Salato Wildlife Education Center, Frankfort, KY

**Date:** June 25 & 27, 2008

**Time:** 8:30 a.m.

**Dates:**

**June 25**, Project WILD *Aquatic*: 8:30 – Noon with optional afternoon tour of the Peter Pfeiffer Fish Hatchery in Frankfort and macroinvertebrate sampling of the Elkhorn Creek. (You will get wet.)

**June 27**, Project WILD: 8:30 a.m. – 4:00 p.m. with indoor and outdoor activities.

**Time:** 8:30 a.m. – 4:00 p.m.

**Cost:** \$10 each workshop. Lunch is on your own.

**Participants:** Teachers; parents who home school; scouting, youth, and other group leaders and informal educators

**Limit:** 30

**Registration Deadline:** June 1, 2008. Registration for each workshop is required.

These highly acclaimed, award-winning curricula teaches students *how* to think, not *what* to think. Project WILD Aquatic and Project WILD offer KERA-compatible, interdisciplinary, hands-on activities emphasizing wildlife and the environment. Participants receive a curriculum guide during each workshop and other valuable resources and reference materials.

There will be both indoor and outdoor activities, so be sure to dress for the weather. Project WILD Aquatic involves wading a stream and participants need to bring water-ready shoes and clothing.

The Salato Wildlife Education Center is located on the grounds of the Kentucky Fish and Wildlife Headquarters. From I-64 at Frankfort, take exit 53B to US 127 north and travel 1.5 miles to US 60. Turn left and drive 1.7 miles west on US 60 to the entrance of KDFWR on the right. Turn right into the complex and proceed ahead about 0.5 miles to the Education Center on the left. Please drive carefully.

Phone (502) 564-7863 to register. Register for each workshop **separately**. Registering for one does *not* automatically enroll you in the other. For more information, contact [venita.bright@ky.gov](mailto:venita.bright@ky.gov).

## Animal Tracks Class February 23, 2008

Because of the turnout last season, we will again offer our animal tracks class. Children of all ages are invited to the EEC Saturday afternoon, February 23, 2008, from 2:00 to 5:00. All who attend will have an adventure of mythic proportions! Students will make plaster moulds of an animal track of their choosing. While the molds are drying, students will go on an educational adventure through the EEC, investigating different habitats and searching for animal signs and tracks.

**Volunteers and visitors are always welcomed.**

**To schedule an appointment please contact Wes at  
(502) 597-8106, or [william.stilwell@kysu.edu](mailto:william.stilwell@kysu.edu).**

The Kentucky Heritage Land Conservation Fund Board purchased land for the EEC and continues to support it. Please assist this organization by purchasing Kentucky Nature License Plates. A portion of the proceeds is used to support this project and many other conservation efforts throughout the state.



Good Day!