

# Brown Family Environmental Center at Kenyon College Newsletter



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## WETLANDS: *workhorses of the landscape*

*By Siobhan Fennessy, Associate Professor of Biology*

Once thought of as inhospitable and sinister landscapes, best to be drained, wetlands are now known as a one of the most biologically diverse and productive ecosystems on earth. They provide many ecological benefits, dating back to the Carboniferous Period when the swampy conditions of the time led to the production of the fossil fuels we use today.

They are often found in the transition zone where water meets the land. Because they are neither terrestrial nor truly aquatic ecosystems they share characteristics of both, making them extremely dynamic, with a rich

abundance of species. They are typically shallowly to intermittently flooded lands where water affects all aspects of their function, including species diversity, soils, and nutrient cycling.

### WHAT MAKES A WETLAND?

Some wetland types, like ours at the BFEC, are flooded or saturated for only short periods during the year, making them difficult to identify in the dry season. Regardless of how wet they are, all wetlands have three things in common:

- ♦ water enough to saturate or flood the soil for some part of the growing season;
- ♦ soils that are unique from adjacent upland soils, in large part because they are generally anaerobic; and
- ♦ plants that have evolved to grow in very wet soils (unlike your typical house plant, which can easily be watered to death).

The term wetland includes a diversity of ecosystem types; for example, in Ohio we have marshes (including Lake

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## Green Energy at the Earth Day Health Expo



Local environmental and health organizations are again teaming up to host the third annual **Earth Day Health Expo on April 19<sup>th</sup> at the Kenyon Athletic Center**. This **FREE** event will focus on how we can keep ourselves and our world healthy. You may be surprised to learn how the two go hand-in-hand!

A feature topic of this year's event is a prime example of the health-environment connection: green energy. Hear presentations from individuals and companies about their experiences with solar, wind, and geothermal energy and learn how these technologies can work for you. Keynote speaker and author Greg Melville will also share his experiences travelling cross-country in a grease-powered vehicle, detailed in his *New York Times* reviewed book, "Greasy Rider."

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### INSIDE...

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.. Continued from page 1: Erie coastal marshes), bogs, fens and swamps. Marshes generally have standing water and are dominated by emergent herbaceous vegetation such as cattails and rushes. Swamps are dominated by trees and shrubs with little else, except water, in the understory. Bogs and fens accumulate peat, and in the case of bogs, it is often harvested for fuel or for use as peat moss in gardening. Their peat is strongly acidic (low pH) and very low in nutrients, hence they are home to a unique array of plant species that are carnivorous, including species sometimes grown as houseplants such as pitcher plants or ve-

slowly through the site, eventually joining Wolf Run. For many years cattle grazed the site, which is a common use of this type of wetland. In the fall of 2000 a fence was installed to keep the cattle out and allow the site to recover. Kenyon students have been active in monitoring the site since then to document changes.

As we anticipated, the plant community has rebounded to a remarkable degree. Where once there were about 10 plant species, and plenty of cow hoof prints, there are now over 50 plant species at the site.

## *Because of their natural ability to improve water quality they have been called the “kidneys of the landscape.”*

nus flytraps that catch and digest insects as a way to acquire nutrients for their growth.

### WORKING FOR YOU

Wetlands are perhaps most prized for their “ecosystem services” that benefit both human and environmental health. They support a vast array of species, including many amphibians, waterfowl, fish and other wildlife that require wetlands for general habitat, breeding grounds or nursery areas. These wetland dependent species have become imperiled in many parts of the world as wetlands decline. Wetlands also perform functions such as water purification, flood regulation, carbon storage, coastal protection and recreational opportunities. Because of their natural ability to improve water quality they have been called the “kidneys of the landscape.”

Wetlands cover only about 6 percent of the land area of the earth, and of this area it has been estimated that nearly half have been lost due to human activities. Nearly 55% of the wetlands that were present in the U.S. at the time of settlement have been lost due to human actions such as drainage for agriculture and development. Losses approach 90% in some states, including Ohio. To counter this trend and reverse losses, wetlands are being restored or created at many locations around the world, including at the BFEC!

### BFEC WETLAND RESTORATION

A large wetland exists adjacent to Wolf Run within the portion of the BFEC preserve that lies north of Route 229. It is a relatively uncommon wetland type, a “wet meadow slope wetland”, so called because its main source of water is groundwater that emerges at the bottom of a hill that borders it to the east. Water flows very



*Swamp milkweed, a plant found at the BFEC wetland*

Many of these are wetland dependent species, such as the swamp milkweed (*Aesclepias incarnata*, pictured here) and joe-pye weed (*Eupatorium purpureum*) with colorful, showy flowers. Others, such as the common rush (*Juncus effusus*) and Frank’s sedge (*Carex frankii*) are grasslike with very reduced flowers. There are even a few plants that are downright dangerous to any exposed skin, including rice-cut grass (*Leersia ory-*

*zoides*) and tear-thumb (*Polygonum sagittatum*). These have small hooks on their leaves and stems that can scratch the unsuspecting passerby, so it is a good idea to wear pants if you walk through this site in the summer. Our wetland is also home to insects, small animals, and some amphibians, including sightings of spotted salamanders.

Students have also been active in research at the site. Early in the restoration process we established a series of wells (also known as 4 inch diameter PVC pipe) to measure groundwater levels in the wetland. The amount of water present is important because, as in all wetlands, hydrology is the “master variable” that controls a lot of what happens in the system.

Several students have worked on a project to study the role of this wetland in the global carbon cycle. Despite the limited extent of wetlands globally, they are estimated to contain approximately 20% of all the carbon in the terrestrial biosphere, thus they serve as an important storehouse of carbon. Kenyon students have investigated the uptake and release of carbon dioxide, an important greenhouse gas, from the soils at the site. Studying this wetland to determine how carbon moves through it will give us an indication of how restored wetlands change through time, and how our wetland is linked to the global carbon cycle!

# EARTH DAY HEALTH EXPO ~ SUNDAY, APRIL 19TH

12:00 - 4:00pm

Kenyon Athletic Center

## Event Organizers

Brown Family Environmental Center  
 Knox County Health Department  
 Knox Community Hospital  
 Knox Soil & Water Conservation District  
 Knox County Park District  
 OSU Extension Knox County  
 Kenyon College Wellness Initiative  
 Mount Vernon Nazarene University

## Featured Activities

~ Green energy speakers and vendors ~  
 ~ First local Farmer's Market of the year ~  
 ~ Kid's Corner Activities & Farm Animal Petting Zoo ~  
 ~ Door prizes ~  
 ~ Vendors of green products ~  
 ~ Live music and concessions ~  
 ~ Free blood-pressure and cholesterol screening ~  
 ~ Recreation, environment, health & safety resources ~  
 ~ Finish line of the Earth Day Challenge ~  
 Marathon and Marathon Relay



## Support the BFEC ~ Become a Member

Now is the time to become a member or renew your annual membership to the BFEC. There are many reasons to give, perhaps foremost for that sense of satisfaction knowing you're helping us achieve our goals of environmental education and conservation. Your membership entitles you to being the first to know about offerings, receive a hard copy of our newsletters, a 10% discount on high quality bird seed, and preferential RSVP status on popular workshops. Please use the form below or payment envelope to send in your membership today, and thanks!

**Adopt-a-Bench!** We're also offering a new opportunity for members to have a bench placed at a BFEC trail location of their choice with a plaque honoring their special contribution. Please check the box below if you'd like to contribute to this project.



**Membership level:** Student \_\_\_ \$20 Individual \_\_\_ \$35 Name \_\_\_\_\_  
 Family \_\_\_ \$50 Friend \_\_\_ \$100 Patron \_\_\_ \$250 Address \_\_\_\_\_  
 Benefactor \_\_\_ \$1000 + City \_\_\_\_\_  
**Amount enclosed:** \_\_\_\_\_ State, zip code \_\_\_\_\_  
 My check, payable to Kenyon College, is enclosed Telephone \_\_\_\_\_  
 Please bill my \_\_\_ Visa or \_\_\_ MasterCard Email \_\_\_\_\_  
 Card number \_\_\_\_\_ Exp. date \_\_\_\_\_

Yes! I've enclosed a special gift of \$250 to have a bench placed along a BFEC trail of my choice, along with a plaque recognizing my contribution.

Your donation is tax deductible as allowed by law. The Brown Family Environmental Center at Kenyon College is part of Kenyon College, a 501C(3) nonprofit organization.

**Mail to:** BFEC, P.O. Box 508, Gambier, Ohio 43022

# On the Ground

by Facility Manager David Heithaus

Spring is peeking around the corner yet again. Then retreating... then ducking away... We're sure it will make up its mind sooner or later so we're going ahead with plans we made while it was too cold to take them too seriously. That's how we stay productive here.

## MORE TREE TIME

In March we got going with the first of a series of planting projects that will continue through fall. For those of you who remember the walnuts, they've been husked, soaked, caged, hung, buried and exhumed and now we're expecting them to forget all that and form the core of a small walnut grove dedicated to the students who've helped collect and prepare them for planting.

We're also eagerly anticipating the arrival of a new set of Paw Paw trees to be planted on both sides of the river. We'll be adding to the small grove established last year above the prairie as well as starting a second grove near the Miller Observatory. While it may be awhile before the trees bear fruit, hikers of the future will be in for a native fruit treat.

## HABITAT RESTORATION

On a grander scale, the BFEC is again partnering with the US Fish & Wildlife Service to control invasive plant species and restore habitat. For those of you familiar with the Corridor Trail, you've probably noticed the partially wooded drainage that flows southwest through the grazing paddocks to Wolf Run. In order to preserve water quality, create wildlife habitat and improve the living conditions of the cattle, we'll be fencing off a seven acre corridor along the drainage, removing the abundant invasive shrubs and re-planting native hardwood trees. Ex-

pect to see hickories, oaks, sycamores and maybe even a cypress or two.

## GARDENS GET GOING

The BFEC gardens in all their forms are starting to buzz. Look for new interpretive signage in the Wildlife Garden showcasing the wide variety of native plants that will provide for a cavalcade of critters throughout our favorite season.



*Dave demonstrates the BFEC's new drip irrigation system at the March 21st workshop*

In veggie garden news, the BFEC is proud to announce a community garden partnership that will begin its trial run this growing season. We'll be providing space, soil and deer protection and community members will be contributing their time, seeds and effort to produce a variety of crops for both their plates and those of area food banks. If all goes well this year, we'd be excited to expand the project to other beds in the future.

On the topic of other beds, I'm sure that anyone who regularly finds this publication in hand has spent much

of the winter nervously drumming their fingers in anticipation of news of Pumpkinville mk. II©. Sadly, it is my duty to report that due to special limitations to staff time this summer (it's a baby - see next page), the rise of the Pumkings© will have to wait another year. Lest your tears smear the rest of this riveting issue, take heart; the potatoes and sweet corn that will cover the realm of Pumpkinville© this summer will only make the squash lords that much more powerful in 2010. Plus we'll have had a season to try out a new secret weapon: drip irrigation.

**DRIP IRRIGATION:** *Why we're putting our money where our mouths are by investing in drip irrigation and why you should too:*

In a phrase: less is more. Drip irrigation uses less water, less frequently and delivers it more efficiently precisely where plants need it. On top of that, the low volume required by drip systems allows a much larger area to be watered from a single source. At the end of the day, you'll save time, water and money and grow a larger number of healthy plants for your trouble.

Conventional sprinklers deliver only a fraction of their water to the root zone. Much of what is sprayed from a nozzle evaporates, runs off, blows away, or promotes healthy weeds. Beyond water conservation, many plants are much more susceptible to certain molds and fungi if their leaves are exposed to too much water. Add that drip irrigation promotes deep root growth rather than the shallow roots facilitated by sprinklers and it seems a better question would be "*why NOT drip irrigation?*"

If you missed our drip irrigation workshop in March and want more information, let us know and we'll send you workshop materials.

# NEWS from the BROWN

## HAIL THE HELLBENDER



At 27 inches long, the hellbender clocks in as Ohio's largest amphibian. These mid-evil appearing (but harmless) salamanders bend the typical amphibian life cycle rules by skipping a terrestrial stage and living entirely in water. Due to general river decline, **hellbenders are also an Ohio Endangered Species and under consideration for federal listing, which is why we're very excited about the two recent sitings in the Kokosing River.** One was spotted in our neighborhood near the Laymon Rd. bridge, and the other was found near Pipesville Rd. Hellbenders feed almost entirely on crayfish, but will also eat small fish, invertebrates and the occasional scavenged item, including fish bait. The Laymon Rd. hellbender was inadvertently pulled to shore with baited intended for catfish.

Hellbenders are indicators of excellent stream health because they require cool, clear water for breathing oxygen through their skin. Sediment, or excess mud from farm fields, constructions sites, and eroding stream banks is threatening hellbender populations and presents a nationwide pollution concern, clogging gills and river bottom habitat. Hellbenders are yet another reason to be proud of our river - celebrate this gem at the June 27th Kokosing State Scenic River Day (see calendar page 6).

## EXPECTING IN 2009

Spring is the season for expectation. The promise of sunshine and growing things; the warm winds and cool rains that no longer freeze to windshields and the branches about to fall through them. For us spring holds another type of expectation this year: the expectation that we will be short staffed. Yes, our tireless Programs Czar is with child and as much as she tells me that we're *gaining* a member of the BFEC family, I see it more as *losing* someone who makes us all look good and provides so much to so many through the variety of wonderful programs she forges every week. She is the face of the place and you have no idea how lucky you are that she is. That being said, you are about to find out... We'll be doing our best to fill at least a toe of Heather's giant shoes, but from time to time, we'll probably fall short. When you call or stop by this summer, expect to see the "gone fishin'" sign up a bit more than usual - when you do, wish Heather well and bear with us.



## BLUEBIRDS AND TRUSTY MONITORS RETURN



With the 9th annual bluebird workshop held in March now behind us we're gearing up for our tenth season of monitoring the 37 nesting boxes that comprise our bluebird trail. While much of the trail remains the same, you may notice a few slight changes. Due to the growth of scrub species on the hillside above the prairie, we've moved two boxes that have lived there since near the beginning. The vegetation will protect our new oak seedlings, but it doesn't allow bluebirds the open space they need and *does* provide opportunity for climbing predators. Addressing some trends in data over the last two years, our entire northern trail has also been relocated to the center of the Corridor Trail; watch out for those poles when you're running by!

This year we welcome back three very dedicated monitoring veterans - Keith Kitchen, Jan Ellis, and Sarah Goslee-Reed - who tirelessly trudged from hill to hill in 2008, all the while carrying an awkward and disintegrating plastic box full of datasheets and tools. We're welcoming them with another BFEC bluebird trail first: a backpack...

# Calendar of Events

All events start from the BFEC Resource Center at 9781 Laymon Road unless stated otherwise.  
Please contact 740-427-5050 or [kerkhoffj@kenyon.edu](mailto:kerkhoffj@kenyon.edu) for additional information.

## Spring Sky Astronomy – Friday, April 17<sup>th</sup>, 9:15pm

Explore the spring sky with Kenyon Professor of Humanities Tim Shutt. Bring a blanket or chair and sit back to admire the season's constellations as you listen to mythological stories about the stars. In the event of heavy cloud cover the event will be rescheduled; call 427-5052 for up-to-date information.

## Earth Day Health Expo & Earth Day Challenge Marathon & Relay - Sunday, April 19<sup>th</sup>, 12:00-4:00pm, Kenyon Athletic Center.

The Expo is a FREE event that will focus on how to keep ourselves and our world healthy - two goals that often go hand-in-hand! Features will include door prizes, music, retail and organization vendors, farmers market, and hands-on activities for people of all ages. The Marathon will start and conclude at the same location - help cheer on runners as they finish!



## Sounds of Spring – Thursday, April 30<sup>th</sup>, 7:00pm

Frogs and tadpoles abound at the BFEC ponds! Come learn about the many species that call our ponds home, identify them by sound, and enjoy the blissful spring cacophony. Led by Kenyon Professor of Biology Siobhan Fennessy. All ages welcome.

## Kokosing State Scenic River Day – Saturday, June 27<sup>th</sup>

Celebrate one of Ohio's best rivers by lending a hand with a cleanup or taking a canoe float. The cleanup will start from the Knox County Park District's canoe access on Lower Gambier Road at 9:30am (located approximately ¼ mile from intersection with Route 229). A canoe float will be offered (first-come, first-served) at 1:00pm and will start from the Laymon Road canoe access. Participants may start signing up at 12:30pm. Shuttles for the cleanup and float will be provided. Call the Park District at 392-7275 for additional information.

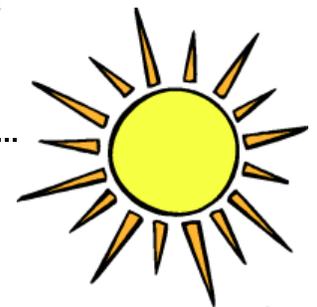
## Wolf Run Creek Walk – Thursday, July 16<sup>th</sup>, 6:30pm

Cool your heels in the clear water and shade of Wolf Run with Kenyon Professor of Biology Siobhan Fennessy. Discover the diverse life of small streams with seine nets, and learn how creeks are vital to the health of the larger rivers they feed (in this case, the Kokosing River). All ages welcome! Please wear water shoes or old sneakers for walking in water. Participants will meet at the resource center and then drive to the Route 229 access to the BFEC preserve.

## NATURE'S KEEPERS SUMMER CAMP

*“Here Comes the Sun”*

August 5<sup>th</sup> - 8<sup>th</sup>



Calling all kids who have just finished 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> grades! You're invited to attend the Brown Family Environmental Center's day camp, this year featuring the theme "Here Comes the Sun." Campers will explore the BFEC's 400 acre preserve while learning how the sun's rhythms affect us and the life around us, investigating topics from solar energy to how the sun fuels Ohio ecosystems. Camp runs from 9am to 4pm on August 5<sup>th</sup>, 6<sup>th</sup>, and 7<sup>th</sup>, and culminates with the family Dog Days Trail Running Festival and camp picnic on the 8<sup>th</sup>. Call 427-5052 for registration information.

# Thank You to...

## Our Members...

*Membership is based on the calendar year. Please become a member or renew your membership for 2009 with the form on page 4.*

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Karen Wright

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Rebecca Metcalf  
Pat & Ray Heithaus  
Bob & Buffy Hallinan

*Bev Actis, for her donation of books*

## Our Volunteers...

*In the office, classroom, and on the trails:*

Jane Crosby  
Mike Dailey  
Liz Lewis  
Keith Kitchen  
Riley Witte  
Brian Zimmerman

*Bluebird Monitors:*

Keith Kitchen  
Jan Ellis  
Sarah Goslee-Reed  
Susie Fish

*Walnut Planting Volunteers:*

Thank you to the 20+ Kenyon student volunteers who helped plant our new walnut grove on March 22nd!

*John Minard, for lending his exceptional knowledge to another great Bald Eagle Watch*

# THE BROWN FAMILY ENVIRONMENTAL CENTER *at Kenyon College*

9781 Laymon Road, Gambier, Ohio 43022 ~ (740) 427-5050 ~ <http://bfec.kenyon.edu>



## *Our Mission*

The Brown Family Environmental Center at Kenyon College is dedicated to research, environmental education, and the preservation of the natural habitats and cultural heritage of the Kokosing River Valley.

## *Co-Executive Directors*

E. Raymond Heithaus, *Jordan Professor of Environmental Studies & Biology*  
Siobhan Fennessy, *Associate Professor of Biology*

*Facility Manager*  
David Heithaus

*Program Manager*  
Heather Doherty

*Facility & Program Assistant*  
Jill Kerkhoff

## *Upcoming Events*

*See page 6 for more information*

April 17: Spring Sky Astronomy

April 19: Earth Day Health Expo &  
Earth Day Challenge Marathon

April 30: Sounds of Spring

June 27: Kokosing State Scenic River Day

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CONTAINS DATED MATERIAL

The Brown Family  
Environmental Center  
*at Kenyon College*  
P.O. Box 508  
Gambier, Ohio 43022



