



Bloodroot enjoys an interesting symbiosis with box turtles. Look for it in late March on the edges of the Wildlife Garden.

The Secret Lives of Wildflowers

Spring has sprung at the BFEC and Ohio's woodland jewels are blossoming throughout the preserve. Bright pinks, vibrant purples, garish yellows, and blazing reds fill the woods and meadows with life and color.

Wildflowers may appear to lead beautiful, yet mundane lives, swaying gently in a woodland breeze, or softly filling our sinuses with lovely floral scents (or sneezes). Although we may appreciate a wildflower for its shape, scent, or color, we don't often consider the roles these traits

play in the secret lives of wildflowers.

THROUGH THE BELLY OF THE BEAST

Many exotic plants have very obvious symbiotic relationships with insects. For example, the star orchid of Madagascar has nectaries (nectar "tubes") over ten inches long, which can only be accessed by the ten-inch long proboscis of the Darwin's Hawk Moth. However, you don't have to travel to the jungles of Madagascar to find this secret symbiosis between plants and animals; it can be ob-

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.....
Earth Day is not just for environmentalists (or environmental centers)! No matter what your interests, you'll find something that appeals as departments across campus invite you to celebrate on April 22 (see details on page 4 & 6).

Diverse involvement reflects what people working on earth-friendly initiatives at Kenyon found years ago: it requires support from everyone - students, staff, faculty, and administration - to work.

The same goes for community initiatives such as recycling, one of the focal points of the **Earth Day Festival**.

Most of us are aware that recycling reduces landfills and litter, and keeps our air clean by reusing material instead of manufacturing new.

Behind the scenes, recycling requires a complex system that (in over-simplified terms) looks a little bit like this:

- ◆ Individuals and businesses (YOU!) recycle.
- ◆ Recycling service providers (often a municipality or private company) collect the material.
- ◆ Another company purchases the material and resells it to manufacturers, who incorporate it into new products.
- ◆ consumers (YOU!) seek products with recycled content.

The Earth Day Festival, (scheduled for 11am - 3pm at the Kenyon Athletic Center) will feature exhibitors offering products made from recycled materials, helping all of us shop with a cleaner conscience. Items will include hand bags, paper, rugs,

**Kenyon
Celebrates
Earth Day**
SUNDAY, APRIL 22

Middle Path Day
Earth Day Festival
Earth Day
Challenge Marathon
Gund Gallery Family Day
Week of Sustainability

kenyon.edu/earthday

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served in your own back yard.

Bloodroot (*Sanguinaria canadensis*, pictured page 1) is a beautiful woodland plant, a member of the poppy family, with a white flower with eight to twelve petals and a single, deeply lobed leaf that looks like a ghost or the “batman” symbol. It is named “Bloodroot” because the root of this flower “bleeds” a reddish sap when broken.

Bloodroot has no nectar, but the large white petals attract a few insects for pollination. The fruit of bloodroot has a small tube attached to it, called an elaisome, that contains a sugary, oily substance irresistible to ants. Ants harvest the seeds, gorge themselves on the sweet elaisome, and discard the leftover seed within their tunnels, where it will germinate in subterranean safety. This wildflower’s secret life is known as myrmecochory, or “ant-farming”.

Mayapple (*Podophyllum peltatum*), is another fascinating wildflower. It has two large, umbrella or “palm-tree” like leaves and a single large flower (1 ½ - 2 inches wide) with six to nine waxy white petals. This plant

is often used as an indicator for morel hunters - when Mayapples have fully erupted, morel mushrooms are often beginning to erupt also. The roots and unripe, lemon-shaped fruit of Mayapples are poisonous.

Like Bloodroot, Mayapples have special relationship with an animal. Eastern Box Turtles (*Terrapene carolina carolina*), which can often be seen crossing the roads after a warm spring rain, are relatively common in Ohio, and can live to a great age (some estimates are as high as 100 years).

Box Turtles are the only known vertebrate to feed readily on the fruit of Mayapple, although humans can eat the fruit at the peak of ripeness. Although fallen fruit can germinate into a new plant, research indicates that seeds that have journeyed through the digestive tract of an Eastern Box Turtles have as much as a 90 percent higher success rate than otherwise dispersed seeds.

HEATING IT UP!

In damp, lowland habitats, one can find large leaves that look similar to

tobacco, or cabbage, growing at this time of year. Earlier in the year, one might have found a leathery, crimson speckled leaf, called a spathe, possibly poking up through the snow. Within this modified leaf, one would find a warty protuberance, the flower of Skunk Cabbage (*Symplocarpus foetidus*).

As its name suggests, Skunk Cabbage emits a fetid, skunky smell to attract flies and other insects for pollination. Skunk Cabbage blooms in late winter to early spring, and is able to generate enough heat, through chemical processes within the plant, to melt the surrounding snow. Later in the spring, the roots of this plant contract deeper into the ground, pulling the flower down to the bosom of the leaves and ground where it can later germinate.

JACK (& JILL) IN-THE-PULPIT

Jack-in-the-Pulpit (*Arisaema triphyl- lum*) grows along damp hillsides, and can be identified by three-part leaves and a spathe, or pulpit (similar to Skunk Cabbage). Within the spathe is the Jack, or spadix, the flower. Jack-in-the-Pulpit produces both male and female flowers and attracts many types of flies, wasps, ants, and others using heat, ultraviolet patterns, and smell for pollination. Younger, smaller plants produce more male (Jack) flowers, while older, larger plants produce more female (Jill) flowers. These plants produce small, red, berry-like fruit that is dispersed by a variety of wildlife.

While hiking the trails at the BFEC, stop and consider the beauty of a wildflower, not just for the appearance or sweet smell, but also for its amazing, often hidden relationships. Charles Darwin wrote, “There is a grandeur in this view of life.” Hopefully we can all look a little closer at our natural world to see this amazing hidden universe.



Pictured clockwise from top left: skunk cabbage spathe with bee; jack in the pulpit flower; skunk cabbage leaves; may apple leaves pictured with white trillium flower.



On the Ground

by Facility Manager David Heithaus

This column almost always starts with a smarmy comment about the weather. A topic usually reserved for strangers and surpassed only by extra blades on disposable razors as “things that don’t warrant a whole lot of comment or discussion”. I swore that it wouldn’t happen again but... darn it; the weather really *is* screwier than a seventh hydrating blade right now.

The phrase “I’ve never seen... [insert comment on temperature extremes, precipitation extremes, odd patterns of wildlife behavior, etc...] before” has been bandied about so frequently and for so long you’d think it was the chorus from the pop 40 flavor of the month. And it’s becoming nearly as annoying to hear.

Let’s do the rundown: record setting rainfall, record setting temperatures, more fall flooding, more *spring* flooding, more tornadoes, less snow, more sunburns in March... Now it’s freezing... Records are falling so fast, weather circa 2011/2012 must be the Michael Phelps of the meteorological Olympiad. Seriously. Last week I saw a medallion-bedecked jet stream with a Subway ham and swiss in one hand and a “water pipe” in the other.

So what has all the wacky weather meant at the BFEC? Well... we’ve pretty much lost our collective mind and are flailing about wildly between planning, hibernating, digging holes, planting, cowering under furniture and drinking suspect acorn wine.

But much like spring wildflowers in February, the results aren’t entirely unpleasant...

Recently, improvements in wayfinding and Resource Center facilities have been a priority and a variety of new spring sites are here or on the way: signs and markers and things that float; rocks and dirt and creeping vines; things that smell and stuff

you can eat. All for your enjoyment from this warm season on.

Outside is good, fun is good, natural materials are good... hmm...

NATURE PLAYSPACE

Over the past month or so, we’ve been re-imagining the space that has hung on as *The Medicinal Garden* since the extreme late-nineties. Having tightened up the borders for the third straight year, we figured it may be time for tightened focus as well. Enter nature playspace. My playspace for now but we’ll turn it over to kids of all ages later this spring.

The area will still feature familiar plants of character like rattlesnake master, coneflower and lambs ear but they’ll be joined by some new perennials as well as some taller flora with distinctive shapes and smells of their own. Sassafras, river birch, mints and maybe even a paw paw or two will help frame the new space which also features a second reflection mound (a terrible name... work in progress... mound of reflection? Either way, it’s another pile of grass-covered dirt to sit or play on), a new tower of trumpet vine and somewhere in the neighborhood of 30,000 lbs worth of boulders. I’m a big fan of making anything outside a playground so why not collect some of nature’s more charismatic features in one place, right?

Always a winner with spring visitors regardless of their station on the tree of life, the replicate ponds have not been left off of the upgrade wagon. We recently installed a large stable platform that allows access to parts of the wee ponds formerly reserved for things with webbed feet or gills. Both field trip participants and casual visitors should be afforded a whole new perspective on what’s happening out there in the deep water.



A new pond dock provides improved access to the ponds for school field trip groups and casual visitors.

Rounding out improvements on the immediate horizon, new trail signage is on the way and should be installed before spring has sprung. Anyone who’s ever found themselves pausing and slowly turning a circle, wondering *how in the heck did I get to wherever the heck I am* should finally be satisfied. Just make sure to pick up the latest version of our trail map so the shiny new color-coded symbols we’ll be putting out provide more than bewilderment. And don’t forget: no matter where you are on the BFEC, you’re never more than an hour or so walk from a McDonald’s.

There are many, many ways in which the world can be broken down into “two types of people” and I appreciate that one’s map preferences are one of those ways. If anyone waxes nostalgic for contour lines, I will happily provide you with a more detailed overview of the property. If the end of days should come this December, such a map might prove more useful in the post-human world. Unless the mutants only communicate visually through a series of clip-art hieroglyphs.

In any case, the new maps and symbols are extremely user friendly and were arrived at during the same conversation that put to rest my proposal to invest heavily in the cloning

home décor, toys, cycling mirrors, and much more. Best of all, shopping here also supports the local economy, since most of our exhibitors are from Knox County.

By bringing together these vendors, as well as farm marketers, health advocates, and exhibitors who can guide you to the many ways to get outside in Knox County, we hope to make it easy to keep ourselves and the planet healthy.

A variety of Kenyon entities take part in the event, including AVI, Rural Life Center, Philander Chase Corporation, ECO (a student environmental club), Office of the Provost, Sustainability Office, and many student volunteer groups. For event details, please see page 6.

Middle Path Day will offer an opportunity to get your hands dirty on the 22nd from 10am - 4pm.

The event celebrates the beauty of Kenyon's campus and the Village of Gambier with projects to maintain and enhance them, including planting trees and flowers, raking gravel, and picking up litter. Meet at the

tent on Middle Path across from the Village Inn to sign in and pick up tools. Prizes and refreshments are offered, and children are welcome. For more information, contact Tom Stamp at stamp@kenyon.edu.

Middle Path Day is organized by the Office of the President, the Kenyon Maintenance Department, and the Kenyon Bookstore.

The **Earth Day Challenge Marathon** is expected to attract nearly 600 runners! The race will start at the Kenyon Athletic Center (KAC) at 8am, and follow a course through Gambier before turning to the Kokosing Gap Trail and finishing back at the KAC. For information about the race, contact John Hofferberth at hofferberthj@kenyon.edu.

The marathon is organized by the BFEC and KenyonFit, and made possible with over 250 student and community volunteers.

Gund Gallery Family Day offers activities for all ages from 11am - 5pm on the 22nd. You are also invited to explore the themes of

the natural world and human presence in two new spring exhibitions.

Persistence: The Rural in American Art traces the contours of rural life and landscape in American art. *Kiki Smith* showcases this artist's fanciful exploration--in prints, drawings and sculptures--of the biological realm.

For more information about the gallery, visit www.thegundgallery.org. On the Kenyon College campus, the Gund Gallery stands across Middle Path from the Church of the Holy Spirit, next door to Olin Library. Parking is available behind the library.

The **Week of Sustainability** is an annual event organized by the Kenyon student group ECO. The week will include events like a campus dorm energy competition and speakers on issues related to energy production.

For information about this and other Earth Day activities, visit <http://www.kenyon.edu>.

...On The Ground, continued from page 3

and release of Pleistocene megafauna so it was really a win-win day for our constituents.

NEW GARDEN NATIVES

For those of you tortured by the early arrival and departure of many spring flowers, don't despair. Jill has already been spotted in the greenhouse and lurking around the edges of the Wildlife Garden. The plants have been ordered, the plans made and assistants have been hired- get ready for another spectacular season in that blissful quarter acre north of the

farmhouse. When you visit, don't forget to drink in the new native perennials with all of the smells and sights you've grown accustomed to over the last five spoiled years. Thank you to Mount Vernon's Town & Country Garden Club for their donation towards expanding our display of native beauty.

WETLANDS APLENTY

Until the garden is ready though, don't be shy about a spring walk north of the river. One thing we're rolling deep on this year is vernal pools (or temporary wetlands). It's

like the Vegas strip out there if you're trying to locate just the right spot to do your thing and deposit some egg masses. In fact, I take back all of those apologies for leaving tractor tire-width ruts everywhere last fall because I'm getting some very positive feedback from wood frogs (*pictured above*) and toads. If you head out to search for amphibians, don't forget the boardwalk and Givens' Grove. The new batch of trees seems to be coming out of their slumber in fine form. Wade on over sometime and have a look!



NEWS from the BROWN

SPRING HAVENS FOR SALAMANDERS

For our most elusive group of animals [amphibians], spring is the time to let the guard down and do some relatively visible Spring Breaking. Spotted salamanders are towards the top of the list of animals that you aren't likely to see outside of a vernal pool in early spring. Nocturnal and underground for most of their lives, these large colorful characters respond to warm, moist nights and travel en masse to vernal pools to breed. Similarities to life-cycles depicted on MTV may be noted.

Spotted salamanders prefer large tracts of deciduous forest and are completely dependent on vernal pools, like the one pictured here along the Bishop Backbone Trail, to breed. The salamanders will generally visit the same pool for their entire lives. The seasonal nature of these pools prevents them from developing into permanent bodies of water that can support predators like fish and ensure that a safe place will always be available for laying eggs. A female spotted will lay as many as 100 eggs in a large, round, jelly-like clump. She never lingers; instead leaving her eggs to develop and hatch on their own in a month or two. Young spotted salamanders will remain in the pools for up to four months before shedding their gills and taking to ground.



WHITE -NOSE SYNDROME HITS OHIO

Among the many amazing nocturnal creatures that call Ohio home, none may be more beneficial than our several species of bats. Ohio's bats consume about four tons of insects *per night!* Unfortunately, populations of bats are rapidly declining due to white-nose syndrome (WNS), a disease that causes white fungal growth on the nose and wings of bats (*pictured left*). Bats with this syndrome apparently wake too often from hibernation, which may be causing them to use up stores of body fat during the winter and die from starvation and cold. In some hibernacula (areas where bats hibernate), bats have experienced up to 95% mortality rates.

WNS made its first appearance in Ohio recently in Lawrence County, and is very likely in other parts of the state. Research is currently being done to understand WNS and hopefully save remaining populations. Signs of WNS included white fun-

gus on the body, dead or dying bats on the ground, and bats flying outside during the day in the cool winter months.

BIGGER, STRONGER POISON IVY

If, after your last horrible rash, you swore that poison ivy seems worse now than when you were a kid, you may have been right. Researchers at Duke University found that poison ivy growth increased by 150% when they piped extra carbon dioxide into an experimental forest plot, mimicking what some climate change models are predicting will occur in the atmosphere by 2050.

Not only did the plant grow larger, but the toxicity of the chemical compound within the plant that produces the rash, called urushiol, also increased. Researchers are predicting that woody vines, including poison ivy, will grow more rapidly, which could also be problematic for trees on which vines grow (<http://news.nationalgeographic.com>).

The good news is that poison ivy absorbs larger-than-average quantities of carbon dioxide, reducing the amount of the molecule in the atmosphere. And many animals do not share our aversion to the plant – birds eat its bright red berries, and deer, muskrat, and eastern cottontail eat the leaves and stems.



Calendar of Events

All events are free, open to the public, and start from the BFEC Resource Center at 9781 Laymon Road unless stated otherwise. For additional information, contact us at 740-427-5050, dohertyh@kenyon.edu, or visit <http://bfec.kenyon.edu>

Family Adventure Days - First Saturdays, 1-5pm.

Join us for a different adventure every month! Check out a display, chat with a naturalist, go on a scavenger hunt, or try a craft. Visitors are also free to explore the center, peruse our library, or borrow nets and binoculars.

April 7 Creatures of the Night: Learn about creeping, crawling, and flying nighttime critters.

May 5 Wild flowers - Enjoy the wonders and wildflowers of Spring.

June 2 River Day- The State Scenic Kokosing River is one of the cleanest in Ohio! Check out river fish, stencil river critters, and take a net to scavenger hunt along the river trail.

Herbology: "Magical" Edible &

Medicinal Herbs - Friday, April 6, 5:00pm.

You don't have to be a Harry Potter fan to enjoy "Herbology"! Explore some Ohio's "magical", medicinal, and edible plants and experience them through taste, touch, and even smell. Rain date: April 13th.

Spring Sky Astronomy - Friday, April 13, 9pm.

Explore the spring sky with Kenyon Professor of Humanities Tim Shutt. Bring a blanket or chair and admire the season's constellations as you listen to mythological stories about the stars. Rain / cloud date: April 20th.

Warbler Walk - Sunday, April 29th, 2pm.

Dust off your binoculars - its warbler weather! Join us for a woodland walk in search of springtime's avian highlights. Many of the 25 warbler species that nest in Ohio can be seen (or heard) right here at the BFEC.

Call of the Scenic River: An Ohio Journey

Film Screening - Wednesday, May 2, 7:00pm.

Kenyon Athletic Center Theater, 221 Duff Street, Gambier.

Donations accepted. The State Scenic Kokosing River is in the top 1% of Ohio rivers in terms of diversity and natural beauty. This documentary is the story of Ohio's most natural waterways, told by those who appreciate them and work to protect and preserve them. Hear the state of Ohio's rivers, threats to their health and how you can help. Donations will benefit the BFEC Field Trip Scholarship Fund for elementary school classes. Co-sponsored by Knox Co. Park District.

Miller Observatory Open House - last Fridays, 9pm. Kenyon Professor of Physics Paula Turner hosts an open house on last Fridays of the month. Open houses are cancelled in cloudy weather. Please dress warmly. Contact Paula with questions at turnerp@kenyon.edu. *Directions:* From Mt. Vernon, follow S.R. 229/ Gambier St. east 4 miles. About ¼ mile before reaching the S.R. 308 / Laymon Road junction, turn left at observatory sign onto an access road.



Sunday, April 22

11am - 3pm

Kenyon Athletic Center
221 Duff Street, Gambier

A FREE Family Event!

Over 60 Exhibitors
Farm Market & Live Animals
*Music by **Safire Sun***
Kids' Activity Zone
Health Screenings
*Local Artisans * Door Prizes*
Marathon Finish Line

Presented by:
Brown Family Environmental Center
Knox Community Hospital
Knox County Health Department
Knox County Park District

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Support the BFEC

**Membership is based on the calendar year.
Now is the time to join or renew for 2012!**

There are many reasons to give, including the satisfaction of knowing you're a part of critical environmental education and conservation programs. Receive preferred access to popular workshops, a hard copy of our newsletters, and 10% discount on bird seed. Please use the form below or payment envelope to send your contribution today, and thanks!

Membership level: Student ___ \$20 Individual ___ \$35
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Brown Family Environmental Center at Kenyon College

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Our Mission

The BFEC at Kenyon College exists to engage Central Ohioans of all ages with nature, and to support the goals of Kenyon College by conserving the natural diversity of the Kokosing River valley and providing opportunities for education and research.

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

SUNDAY, APRIL 22

Kenyon Athletic Center • 11am – 3pm
221 Duff Street, Gambier

- * Local Artisans * Farmers Market & Live Animals *
- * Kids' Activity Zone * Door Prizes *
- * Free Health Screenings *
- * Live Music by **Safire Sun** *
- * Earth Day Challenge Marathon Finish Line *

Details inside & at <http://bfec.kenyon.edu>



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