

Brown Family Environmental Center

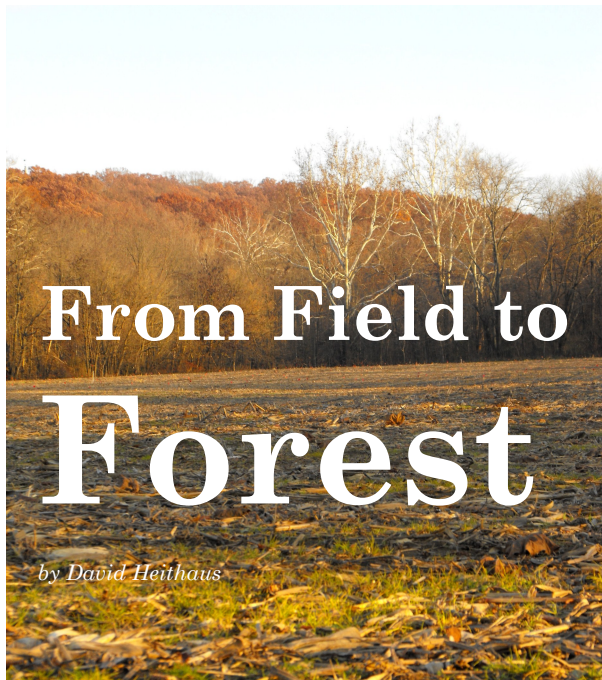
at Kenyon College

Field Notes



January 2014 *Vol. 18 / No.1*

January, February, March



From Field to Forest

by David Heithaus

block of terrorist training camps interspersed with nursery schools. Most of the time we are left with the responsibly inefficient tactics of manual removal, cut stump herbicide application or sighing heavily and walking to a less impacted area.

While there may come a day when some areas become so overrun that we will be forced to start from scratch (at least in the understory) we much prefer the rare opportunity to start from square one without having to use a flamethrower or drone

to starting each season fresh and selecting for the plants they like while reducing the impact of plants they don't. While we are generally after a slightly more complex balance of species, the blank slate left by agriculture is by and far the best place to begin a reclamation project.

We are restoring three such areas this year: one to prairie, one to prairie and wooded riparian buffer and one to prairie, hardwood showcase and experimental forest. The latter, encompassing eight acres along Laymon Rd. between the Gap Trail and Kokosing River, is the most ambitious and exciting.

The finished product (installation anyway) should be completed by the fall of 2014. It will be comprised of four ma-

The BFEC has planted 10,000 trees and restored 70 acres of land to natural habitat over the last 15 years. We're now embarking on the next project: transforming an agricultural field into prairie and forest.

One of our primary goals at the BFEC is to maintain and improve our landscape in order to support the maximum diversity of native plants, animals and habitat types. Most of the time this means fighting a holding battle against invasive species- a task that at times can feel somewhere between futile and hopeless. Like being a Browns fan.

A major hurdle to maintaining habitats that are burdened with invasive species is finding an effective way to knock off the bad guys without inflicting damage on the good guys hunkered down amongst their roots. This means the easiest methods of control (broadcast herbicide, fire or a bulldozer) would be like carpet-bombing a

strike. Over the years, several such opportunities have presented themselves and from these we've created acres of prairie and planted over ten thousand trees of over forty distinct species. This fall, we got our latest crack at starting over at the very heart of the BFEC, between the Resource Center and the Kokosing River.

Land used for agricultural purposes- either grazing or row crop- offers some of the best opportunities to manufacture 'native' habitat and to plan for the effective control of invasive species. In fact, most if not all of the BFEC was used for agricultural production at some point. Few have become as efficient as modern farmers when it comes

major and four minor elements. The major elements to be installed in 2013 are the prairie unit, the oak grove, the birch grove and a portion of the beech/maple grove. Minor elements include a number of 'species of interest and utility' such as paw paw, butternut, Kentucky coffee tree and devil's walking stick.

Future plantings will establish the remainder of the beech/maple grove and smaller units showcasing different forest communities from across the state and investigating the practicality of assisted migration with species that traditionally grow at more southerly latitudes (see more on pg. 2).

Continued on page 2

INSIDE...

The Promise of Spring.....page 3
Emerald Ash Borer..... page 5

Trying Restoration at Home..... page 4
Calendar of Events..... page 6

The prairie unit will contain four types of warm season grasses and thirteen flowering plants including butterfly weed, purple and grey-headed cone-flower, wild bergamot, foxglove and black-eyed Susan. It will create habitat useful for birds and pollinators and act as a transition into what will become the forested section of the project area (see more on prairie, pg. 4)

To blow a squirrel's mind...

The oak grove, which lies at the center of the project area, contains about 300 trees of 30 distinct species- over half the number of species that occur naturally in the Eastern United States and well over half of the species that are actually likely to survive in Ohio.

The project began, as they tend to do, with site prep and layout. To get everything ready for planting after the harvest, we started by brush-hogging the entire field which was corn stubble at the time. Realizing that we still had a troubling amount of (now finely shredded) debris covering the area we turned to begging and bribing folks who had long since put away their baling equipment to come rake and bind over thirty round bales... of corn stubble. Which are considerably heavier than round bales of more traditional materials. At present they are sitting patiently on the edge of the field awaiting a crane or airlift or some other bigger-than-mine piece of equipment to load them onto a flatbed to be used as winter bedding for cattle.

Turning to layout, we had conceived of the oak planting as a series of concentric circles. Deciding that trying to establish exact planting placement on the fly was a bad idea, we took to the field with several stakes, a length of rope longer than was wieldy, a big stake, a little stake, two sharpies and several hundred little plastic flags.

The idea was to drag the rope around the big, central stake to create each circle's perimeter and to place a flag every twenty feet along each one. The twenty feet was established with the little stake and some extra... oh, never mind. We placed a huge number of flags in the field to mark future tree locations in a carefully planned layout that looks quite random unless you happen to be orbiting Earth above Knox County. We'll define the circles with paths in the next ten years or so.

Needless to say, when a fantastic number of flags appear in the middle of a cornfield right next to the Kokosing River along a heavily traveled section of road, people tend to notice. Indeed, the field of flags along Laymon Road raised a number of eyebrows and questions and I will endeavor to address some of them here... albeit retrospectively:

What we are **not** doing: installing new drain tile, being compulsive about soybean placement next year, tunneling under the Kokosing, fracking, sending coded messages to orbiting Chinese spy satellites, summoning forces from the beyond.

What we are doing: laying out an absurdly complicated oak grove to be enjoyed from space in about twenty-five years. Planting thirty species of oak, four species of birch, two species of beech and a half-dozen other hardwoods of interest. Seeding four acres of warm season grass prairie.

Once we had our layout established it was time to plant trees. With some very dedicated help, each and every flag got it's very own young oak to spend the winter with. The sun shining down on a thin layer of snow, we stood back and admired our field of flags and toothpicks. A lone buck wandered out of the tree line to the east... then another. Four does and two yearlings eyed us from the Gap Trail...

Tires squealed, mud flew, the cash register at TSC cha-chinged and nearly a mile of shiny electrified wire was stretched around the entire site. We want to be sure everyone actually *does* make it through winter. So please watch your step and keep your dogs well-leashed if you happen to wander into the field.

With the site prepared for seeding and planting nearly complete, we're watching our prairie test-tray in the greenhouse and waiting for the right conditions to frost seed our prairie unit. We'll let you know how that went in the spring!

For tips on **trying this at home**, see page 4.

Assisted Migration is the transporting of species into new areas in order to prevent extinction in their traditional range caused by climate change. While many plants are able to adapt relatively quickly, others (particularly at the edges of their range) might not if the pace of change is too rapid. Assisted migration attempts to identify these plants and accelerate their dispersal rates. At the BFEC, it means planting species that usually grow a state or two to the south of Ohio, in case it gets too hot for them there and they can't spread north fast enough to survive.

It is a controversial topic. "Moving foreign plants into new habitats? Won't they become invasive? Isn't that exactly what you've been telling us NOT to do???" Yes it is and this is the primary argument against assisted migration as a management tool. That being said, assisted migration could be extremely effective for some species if a couple of things are kept in mind: 1) pick a species that may actually BE at risk [probably one that does not spread aggressively on its own then] 2) Monitor any transplants closely to ensure they fit in to their new home without displacing traditional residents or otherwise mucking up the neighborhood. What we will be doing at the BFEC is selecting a very small number of non-aggressive plants in small numbers and charting their growth (or not) relative to environmental conditions. The entire project will provide a number of research opportunities in the years to come.



The Promise of Spring

In each tiny tree bud, leaves await their moment in the sun. Here's a short guide on how to tell what leaves spring will bring.

by Heather Doherty

Even if you recall trying this as a child, it's worth another go: walk by a tree and grab one of those low-hanging branches. You might find several buds, but look for the large "end bud." Peel off the little protective bud scales, and depending on the tree species, you may find the tiniest of leaves, tightly packed for spring.

In addition to being a cause for hope, admiring tree buds can help you identify just what kind of leaves will emerge. That's because each tree species has distinct buds and twigs, some providing a complete sensory experience.

The buckeye bud pictured above is round (by bud standards) and has a distinct end bud. (Some claim that the scratched twig has a "rank odor", though I did not find that to be true.) Other species have much more delicate buds, or in the case of oaks, have several buds clustered at the end of the twig.

One of my favorites is the silver maple's plump red bud clusters. As the sun's rays become warmer in February and March, they swell and their color deepens, a welcome sign of spring that you can witness on the many silver maples growing behind the BFEC farm house.

Another tell-tale feature on twigs are leaf scars, which form when leaves fall. In the top photo, you can see a scar on the left side of the twig that looks rather triangular. But leaf scars on ash trees look like crescent moons, while black walnut and hickories have "monkey face" leaf scars. (Go ahead, use your imagination on the black walnut twig pictured right.)

Some trees leave other traces of their identity in winter. Oak trees are known for keeping their leaves through winter,



Buckeye



Oak



Silver Maple



Black Walnut



The **BUD** of a buckeye leaf, pictured far left, is covered in tiny protective **SCALES** (similar in appearance to fish scales). Next to it is the same twig relieved of its scales to reveal delicate leaves-in-waiting.

The dot on the center bottom of the twig to the left is a **LENTICLE**, or openings to release oxygen and water vapor and take in carbon dioxide.

LEAF SCARS form when leaves fall from twigs (like a belly button!) Look closely at some scars and you can see spots where individual veins connected the twig and leaf.

Leaf buds, and future branches, on this twig occur opposite one another, similar to how your arms attach to your body at the same elevation. **OPPOSITE BRANCHING** occurs on just four kinds of trees in Ohio: maples, ashes, dogwoods, and buckeyes, represented by the acronym "MAD BUCK." This twig is of the "buck" variety.

BUD SCALE SCARS form when scales around the large end bud fall off. The scar encircles the twig, and the distance between two scars equals one year's growth.

Is this twig older than your child?

To challenge children, ask them to find a twig older than they are. A twig's age is equal to the number of bud scale scars present. For the answer to the age of this twig, look on pg. 5.

Try This At Home

So you want to stop mowing ... someday.

Two important parts of any restoration project are clear and measureable goals and a sustainable (for you) maintenance plan. What do you want the area to look like next year? In five years? In twenty years? Do you care what it looks like? Are you more interested in attracting and providing food or habitat for wildlife? Which kind? These are the very first questions to ask before embarking on a project.

Step 1: Decide what you want an area to look like or what ecological role you'd like it to perform.

Step 2: Assess (honestly) how much you want to put into the project in terms of time and resources. Does that allow for step 1 to become a reality? If yes, proceed to Step 3. If no, proceed to step X.

Step 3: The fun part: prep the site, plant the trees/grasses/perennials, wash hands, have dinner.

Step 4: Maintain, maintain, maintain. Keep an eye on your project site to make sure you're encouraging only what you want to. Remove invasive plants *before* they get established! Remember: a small bear is easier to wrestle than a big bear... or a herd of bears. Or a herd of bears riding bull elephants with machetes strapped to their tusks... Just pull the invasives as soon as you see them, okay?

Step X: Leave it alone (or keep mowing...)

So you want a...

...PRAIRIE:

Prairie, in my opinion, is the way to go for quick return and relatively low maintenance costs over time. While it can be expensive to install depending on your particular seed mix, the amount of time you'll invest once it takes off is negligible and will generally only occur once or twice per year. A simple mowing or burning regimen generally does the trick.

Generally speaking, a straight up mix of warm season grasses (which grow best in the heat of summer) is not expensive and not overly technical to install. Its ecological value is marginal compared to a mature woodlot but there *are* native animal species that depend on large tracts of grassland/prairie if it's managed properly. If the area isn't of a certain size most of what you'll be providing is food for birds, refuge for small mammals, less mowing for you and a more pleasing aesthetic for yourself and passersby... but that's not so bad and it sure beats mowing.

So what makes a prairie? A prairie is more than just grasses- most feature a number of distinct flowering plants (forbs) as well. Ohio has at least eight distinct types of regional prairie featuring between 30 and 40 species of plants between them. Prairies vary from state to state and from region to region. Variety comes in the form of species composition with different grasses and flowering plants preferring the different characteristics of each region.

...FOREST:

My favorite! Certainly the most productive and 'natural' in Ohio, woodlots can be fun to install and rewarding over time but they will also require the most work to keep on track. Whereas a prairie establishes a 'natural' habitat that is then managed to *prevent* succession, a new woodlot is one where succession is the whole idea... but it's going to need some guidance. The types of forest one might plant should be governed initially by regional appropriateness and secondarily by desired aesthetic or ecosystem role.

At the BFEC we plant a lot of oaks, hickories and walnuts because of the number of animals that find them beneficial. Once you've planted the trees, the work has just begun; keeping invasive plants out of the site will be your primary task. Once the canopy has formed this will get easier but then it will be time to work some native understory plantings into the picture. Even when you've done that (or your children have done that... griping about your scheme all the while) a woodlot in Ohio will still require monitoring to ensure maximum diversity

and health. The reward is there, it just takes a while to kick in.

~

Continued from page 3....

as are American beeches, pictured below. The beech's leaves turn a pale peach, and are accompanied by long, skinny buds.

The birds are thankful that other trees hang on to seeds and fruits through the winter, which become important food sources. The sycamore twig pictured here is shown with its large, round seed head. In late winter, look for birds hanging from them and picking out the small individual seeds as they bide their time until spring.



Sycamore



Beech

If you guessed that the long twig on page 3 has four bud scale scars, and is thus four years old, you guessed right!

A Snowy Winter for Ohio?

For the third year in a row, the snowy owl may be proving that winter is an exciting time to observe the great outdoors. This nomadic bird breeds throughout the arctic, and its population is tied tightly to that of the lemming, its primary food source. Lemming populations are themselves cyclical; when lemmings are scarce, snowy owls may not breed at all, but when they are plentiful, owls may raise up to a dozen young. As the lemming population heads back down, the multitude of young owls have less to eat and are in theory more likely to head south for winter.



The arctic Snowy Owl is appearing in historic numbers this winter in the Northeast and Great Lakes.

This southern “irruption” occurs about once every four years, though the extent and geographic range of it varies considerably. However, this year may be the third in a row that the birds are appearing in the U.S. in high numbers, which has some scientist asking if another factor is at play in their arctic habitat.

In 2011, they showed up in elevated numbers throughout the upper third of the U.S., and 2013, they were sighted from the northern Great Plains to the Pacific Northwest. This year, a spike of snowy owl sightings are being reported in the Northeast and Great Lakes. So far in Ohio they have mostly been spotted along the Lake Erie shore, but also as far south as Chillicothe.

Male snowy owls are almost entirely white, while females and young have more brown barring. Look for them perched high overlooking flat, grassy or marshy habitats that resemble their familiar tundra. Problematically, the birds seem to favor the wide-open terrain of airports. For a map of sightings (or to report your own!) visit ebird.org.



Coming to a forest near you: Emerald Ash Borer



While “emerald” may give the illusion of beauty, beware of this boring beetle, which is on tract to do unprecedented damage to Ohio’s 4 billion ash trees. The emerald ash borer (EAB) is originally from Asia, and was first sighted in 2002 in southeast Michigan, likely having snuck a ride on pallet wood or other ash products. It is now found in 16 states in the Great Lakes and Mid-Atlantic.

Ash trees have very little resistance to the EAB, which damages the tree in larval form. Grubs tunnel just under the bark, where they chew the outer layer of wood that comprises the tree’s circulatory system. Left unable to send sugars down to roots and water and nutrients up to leaves, trees usually succumb to the damage within five years.

EAB was first found in Knox County near Centerburg in 2012. The infestation usually advances at a rate of about two miles per year, though this can be hastened when infected firewood introduces the bug to new places. Though ODNR initially attempted to quarantine the bug by banning the movement of firewood, the ban has been lifted now that the bug is in all but 16 of Ohio’s 88 counties.

Can you save your ash tree from the borer?

Maybe. Treating trees with insecticide (via soaking roots with the chemical or spraying foliage) has had mixed results. A key to success is starting treatment *before* the tree becomes sick, since it needs a healthy circulatory system to spread the insecticide throughout all of its tissues. Visit agri.ohio.gov/eab to learn about treatment options.

The bugs’ presence is told by the “D” shaped hole they leave in bark when adults emerge (above). Adult beetles may also be seen flying May through September.

Calendar of Events

All events are free, open to the public, and start from the BFEC Resource Center unless stated otherwise.
9781 Laymon Road | 740-427-5050 | dohertyh@kenyon.edu | http://bfec.kenyon.edu

The Cool Copperhead *Family Adventure Day*

Saturday, January 4th, 1:00 - 3:00pm. Though many people view venomous snakes with apprehension, the copperhead is mild-mannered. Find out why and see a live copperhead, plus meet other snakes species with Naturalist John Hickenbottom. Families are invited to arrive at 1pm to make a slithery snake from recycled materials, followed by the program at 1:30.

Full Moon Hike - Wednesday, January 15th, 6:00pm

Keep your New Year's fitness resolution going with a brisk 2-mile hike to see the full moon rising (should skies cooperate) above the Kokosing River Valley. Please wear sturdy hiking shoes. In the event of inclement weather, call the BFEC at 427-5052 or email dohertyh@kenyon.edu for hike status.

Ohio Wildlife History *Family Adventure Day*

Saturday, February 1st, 1:00 - 4:00pm, Gund Gallery,

101 1/2 College Dr., Gambier. Join the BFEC & Gund Gallery for a nature art adventure! Starting at 1pm, try children's hands-on wildlife art projects, or take in the Gund Gallery's *Color* exhibit, which shows how color has been used to explore ideas about perception, emotions, and scientific discovery. More info at gundgallery.org.

At 2:30pm, Ohio Nature Education (ONE) will present a live animal program. Ohio looked vastly different 200 years ago, as did the state's wildlife. ONE will present an opossum, kestrel (pictured right), flying squirrels and a barred owl, with stories of how people interacted with them and affected their populations. *Gund Gallery is located on Kenyon's campus along middle path next to the library. Parking is available in town. Or, to park behind the gallery: follow S.R.229 east from Mt. Vernon, turn left onto Wiggan St./S.R.308. Take your first right (look for science quad sign) and an immediate left. Parking lot is straight ahead, and gallery is on your left.*



See a kestrel, the smallest member of the falcon family on February 1st.

Boisterous Birds *Family Adventure Day* - Saturday, March 1st, 1:00 - 4:00pm

It may or may not be warm outside, but the birds know that spring is coming! At 2pm go for a walk to see them proudly singing from the tree tops and staking out nesting territories. If we're lucky, we'll spot the first migrants returning to Ohio. All ages welcome, binoculars provided.

Miller Observatory Open House - Last Fridays, 8 pm

Experience planetary views with Kenyon Physics Professor Paula Turner. Please dress warmly for the unheated observatory. There will be no open house in December; open houses will resume in January. All ages welcome. The events are canceled in cloudy weather; email questions to turnerp@kenyon.edu. *From downtown Mt. Vernon, follow S.R. 229/Gambier St. east 4 miles. Turn left at observatory sign onto an access road (prior to S.R. 308 intersection).*

Celebrate Earth Day! Sunday, April 6th - Kenyon Athletic Center

EARTH DAY CHALLENGE Half Marathon & 4 Mile Run/Walk

Celebrate Earth Day with your feet! Participants of all abilities are invited to walk, run or a little of both for a half marathon or 4 miler. Race begins at 8am, then stay to enjoy post-race amenities and the Earth Day Festival. More info and registration at www.premierraces.com, or contact hofferberthj@kenyon.edu.

EARTH DAY FESTIVAL: Healthy People ~ Healthy World

Keep yourself and the planet healthy - two goals that go hand-in-hand! Enjoy this FREE event with exhibits, vendors, kids' activities, farm marketers, live music & more. The Earth Day Festival uniquely brings together the best in local resources. Celebrate Earth Day by shopping green and connecting with groups that support healthy living for ourselves and our world.

Thank You to...

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After Kenyon Society

Field Trip Scholarship: Barry & Susan Bowden, Laurie Tompson

Our Volunteers

In the office, classroom, gardens and on the trails: Andy Bazany, Caroline Hesse, and Pam Harman. **Special thanks** to the Kenyon Land Lords and Ron Dukes for tree planting in the Laymon Road restoration area

Field Trip Volunteers: thank you the 40 student and community volunteers who helped us bring over 400 elementary students on BFEC field trips this fall!

Harvest Festival: Kelsey Dillon, Kat Devitofrancesch, Rodney Tucker, Peeps O'Kenyon, and Kenyon Chapter of Theta Delta Phi

**Are YOU
a member?**

Membership is based on the calendar year,
so now is the time to join for 2014!

There are many reasons to become a member of the BFEC, including the satisfaction of knowing you're a part of critical education and conservation programs. Receive preferred access to popular workshops, a hard copy of our newsletters, and 10% discount on bird seed. Thank you for your support!

Membership level: Student ___ \$20 Individual ___ \$35
 Family ___ \$50 Friend ___ \$100 Patron ___ \$250
 Benefactor ___ \$1000 +

Amount enclosed: _____

My check, payable to Kenyon College, is enclosed

Please bill my ___ Visa or ___ MasterCard

Card number _____ Exp. date _____

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

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Brown Family Environmental Center at Kenyon College

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



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.

Facility Manager
David Heithaus

Program Manager
Heather Doherty

Facility & Program Assistant
Jill Kerkhoff

Upcoming Events

Saturday	Jan. 4	The Cool Cooperhead
Wednesday	Jan. 15	Full Moon Hike
Saturday	Feb. 1	Ohio Wildlife History
Saturday	Mar. 1	Boisterous Birds
Sunday	Apr. 6	Earth Day Festival & Earth Day Challenge <i>1/2 marathon & 4-miler</i>

Ohio Wildlife History

Saturday, February 1st, 1-4pm at Gund Gallery



A NATURE - ART ADVENTURE!

- * Children's hands-on wildlife art projects
- * Gund Gallery art exhibits
- * LIVE ANIMALS with Ohio Nature Education: birds of prey, flying squirrels and opossum
- * More information inside on page 6

DATE MAILED: January, 2014
CONTAINS DATED MATERIAL

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



