

Small but essential

Like the veins in your body, wetlands and streams are small players that do important work. Use this guide to explore Wolf Run and three distinct wetlands on BFEC trails. Visitors in May will also find spring wildflowers like may apple (left) and wild blue phlox (right), pictured below.



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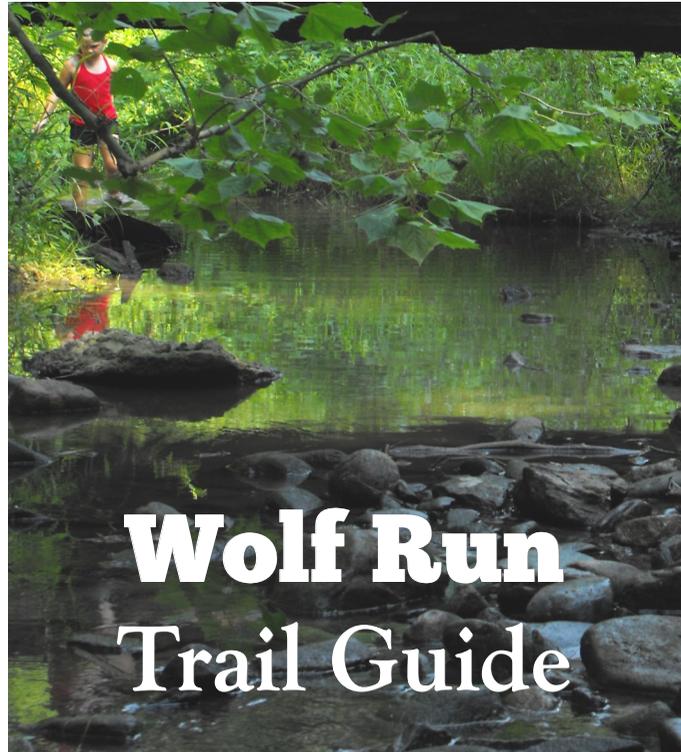
Brown Family Environmental Center at Kenyon College

The Brown Family Environmental Center is a 480-acre preserve that serves Kenyon College and the surrounding community through conserving natural diversity and engaging people of all ages with nature. Visit our Resource Center (see map) to learn more and find a calendar of public events, or visit us online at ...

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Follow the numbered stops on the next page for a self-guided tour of **Wolf Run and three unique wetlands** on Brown Family Environmental Center trails.



Welcome to Wolf Run!

Follow the route marked by white dots above to points of interest along Wolf Run and nearby wetlands. Each stop is marked with a numbered, brown post that corresponds to a description in this guide.

Spring is a wonderful time to enjoy this hike, though trails may be wet. Rain boots are recommended for the New Gambier Loop and Corridor Wetland Trails. See a complete BFEC trail map at our Resource Center (9781 Laymon Road) or bfec.kenyon.edu.

1) Wolf Run

Wolf Run is a creek that flows south into the Kokosing River. Just as your body requires a healthy network of veins to function, rivers like the Kokosing need a healthy network of tributary streams like this one to keep them vibrant.

Tributary streams with **forested banks** will deliver rain to rivers after storms slowly, helping reduce downstream flooding and erosion. Stream-side forests and wetlands also filter pollutants that rain picks up as it runs off of land towards waterways.

Wolf Run is home to fish and bugs that are sensitive to pollution and indicate that the creek is healthy. Look for belted kingfishers (pictured on cover) diving head-first to catch fish, and find salamanders hiding under rocks or logs on the creek's banks.



Tree roots hold river banks in place and provide hiding places for red-back salamanders.



Despite these good signs, Wolf Run suffers from bank erosion due in part to past efforts to make the creek's route straight. Rivers are naturally curvy, and will erode their banks to reestablish their curves, resulting in land loss and harm to wildlife as eroded soil buries the stream bottom (see more on this topic on trail signage).

2) Givens' Grove & Wet Meadow Wetland

This area was named in honor of Doug Givens, former Director of the Philander Chase Corporation (Kenyon College's land trust), in 2011. The BFEC has planted 4,000 trees here, including swamp white oak and bald cypress in wet areas near the boardwalk, and sycamore, shagbark hickory and black oak further upslope and along the small creek to the south.

This boardwalk runs through the edge of a **wet meadow wetland**. Its main source of water is groundwater that emerges at the bottom of the hill to the east, which flows very slowly through the wetland before joining Wolf Run. If you visit in late summer, however, you may see dry ground and ask yourself "where's the water?" Unlike some types of wetland that hold

standing water year-around, this one does so for just a part of the year, in late winter through early summer. The soils below may remain saturated for a longer duration.

A clue that you are indeed in a wetland is the presence of specialized **wetland plants** like Frank's Sedge (*Carex frankii*). Feel this water-loving grass's stem and you'll notice its unique triangular shape. In contrast, you'll also find wetlands grasses here with round stems called rushes (like common rush, *Juncus effuses*). Remember these plants with the saying "sedges have edges, but rushes are round."



The boardwalk leads to an 150-year old **white oak tree** with stout, low branches that are as wide as the tree is tall. This shape tells us that it grew uncrowded by neighboring trees, perhaps left standing to shade cattle.

Oaks are among the most utilized trees in North America. Deer and wild turkey feast on its acorns, and at one time were joined by Native Americans that ground them into flour. Hundreds of insects form galls by laying eggs in its leaves or branches. Birds

like the blue-gray gnatcatcher feed those insects to their chicks, hidden in nests deftly camouflaged by lichens plucked from the oak's branches.

3) Wet Meadow Wetland

The wet meadow wetland described at stop #2 continues here along the Corridor Wetland Trail. This wetland was grazed until the BFEC installed a fence in 2000 to exclude cattle with the help of Kenyon College biologist Siobhan Fennessey. Since then, Fennessey and students have documented a climb in the number of plant species from just 10 to over 50, and have installed wells to study how water and nutrients moves through the site.



You'll also notice a few of our 38 **bluebird nesting boxes** along this trail. The open space here is ideal for bluebirds; watch them swoop down from fences or tree branches to catch insects in short grass.

Bluebirds also require cavities, like hollow trees, for nesting, but competition for these sites soared when house sparrows and starlings were introduced to the U.S. from Europe in the 1800's. The bluebird population plunged, but is back on the rise with the help of nesting boxes. Over 700 bluebird chicks have been successfully raised in ours boxes since 1996.

4) Slope Wetland

Stop here in May, and you'll find yourself standing in a swath of bright green plants that resemble large heads of romaine lettuce. We don't recommend **skunk cabbage** for your picnic, however, since its crushed leaves do smell faintly like its namesake.



When you find skunk cabbage, you know you've also found a wetland because it only grows in areas where groundwater comes to the surface to saturate soils. Groundwater emerges here at the base of the slope to the west, making this a slope (or "seep") wetland.



Skunk cabbage is one of very few plants that creates its own heat. Their hooded flowers emerge in February and may melt surrounding snow. Heat also helps spread their fetid aroma (difficult for humans to detect) to flies that visit and pollinate the flowers. Bees visit on the first 60 degree days

of early spring when skunk cabbage is one of the only sources of pollen or nectar in Ohio woodlands.

5) Bishop's Backbone Bluff

This section of trail follows a bluff overlooking Wolf Run. Early spring is a great time to enjoy the view and hear spring peepers (right) and wood frogs. Both belong to a family of **tree frogs**, and visit small wetlands along the creek to lay eggs before returning to the forest. Spring peepers are small enough to fit on a dime, but sing together by the dozens at mating sites, creating a high-pitched chorus that can be heard for over a mile.



6) Bishop's Backbone Forest

This section of trail features some of the BFEC's most **mature forests**. While young forests often contain trees that are all the same size, mature forests contain larger trees that periodically fall and create openings for younger trees. This process creates

a greater variety of tree size, which boosts biodiversity.

Though this forest may seem mature at about 100 years old, try to imagine what Ohio's forests looked like prior to European settlement, when they covered 95% of the state and trees grew up to 600 years old. **Our forests will continue to change** as they grow, providing benefits for people and wildlife.

This trail owes its peculiar name to a bit of **Kenyon College lore**. Founding college president, Bishop Philander Chase, made an attempt to insulate his students from the evils of the outside world by proclaiming that they would leave Gambier "over [his] dead body." Students soon began referring to the hill that they crossed on their way to Mt. Vernon as the "Bishop's Backbone."

7) Vernal Wetlands

At first glance it may be hard to imagine that this shallow depression holds much value, but as a vernal wetland it provides important services to people (see bottom left) and wildlife.



The word "vernal" means "occurring in spring," which is when these wetlands come to life. Many species of amphibians, like the spotted salamander (below), require them for breeding, and will converge here en masse during the first warm nights of spring. After laying eggs they disperse back into the forest, where they live the majority of their reclusive lives tunneling under leaf litter.

In late summer and fall when rain is scarce, these pools may dry up. This puts pressure on the young amphibians to quickly ready for life on land, but also makes wetlands ideal breeding spots because they lack a primary egg predator - fish.

This vernal wetland is a fragile ecosystem - please enjoy it from land only. Feel free to explore the banks of adjacent Wolf Run to find redback salamanders hiding under rocks and logs on the stream's edge.



Why Wetlands Matter

The three wetlands featured on this tour may look very different, but they do share defining wetland features, like large enough volumes of water to saturate soils. While wetlands like marshes or swamps hold water throughout the year, the wetlands here typically hold standing water only through mid-summer. Due to the constant saturation, wetlands contain unique soils that generally lack oxygen, plus specialized plants that are adapted to tolerate these difficult conditions. So what's to love about these wetland forms?

1) Salamanders and Frogs - Many amphibian species wouldn't exist without the wetlands they require for breeding. A key feature of this habitat is that it periodically dries out, and therefore lacks fish that would happily eat amphibian eggs and young.

2) Flood Prevention - Wetlands absorb floodwater like a sponge, slowly releasing it days later.

3) Clean Water - Wetlands are known as the kidneys of the landscape, with plants and microbes that slowly break down pollutants as water percolates through the soil. In this valley, our wet meadow wetland intercepts rainwater flowing from the grazed hillside to the east, filtering manure before it is able to wreck havoc in the creek. Conserving such "**green infrastructure**" costs just a fraction of alternatives like building treatment plants and flood walls, plus makes our community a more inviting place to live and visit.