



W A T E R



Bernheim
ARBORETUM AND RESEARCH FOREST



connecting people with nature

Access to clean, abundant water is the very foundation of ecological sustainability, social equity and a vibrant economy. The same water that supports nature's fragile balance also serves our homes, irrigates our landscapes, allows us a refreshing swim in the summer heat and serves as the essence of crafts like bourbon. With so many competing or even conflicting demands for its use, access to clean water is something we must never take for granted. It needs our stewardship, care, and vigilance — as if our lives depended on it.



Water at Bernheim Arboretum & Research Forest

The James B. Beam Natural Water Sanctuary Alliance at Bernheim helps support Bernheim's water education programs. The common educational and environmental goals of the James B. Beam Natural Water Sanctuary Alliance and Bernheim are to:

1. Enhance environmental and water cycle education for visitors, employees, and the local and regional communities
2. Improve watershed protection in the interest of ensuring an abundant supply of clean water
3. Preserve and promote biodiversity by supporting protection and growth of native forests, native plants & habitat improvement

We forget that the water cycle and the life cycle are one.”

—JACQUES YVES COUSTEAU



HOW BERNHEIM DEMONSTRATES LEADERSHIP IN WATER PROTECTION AND CONSERVATION:

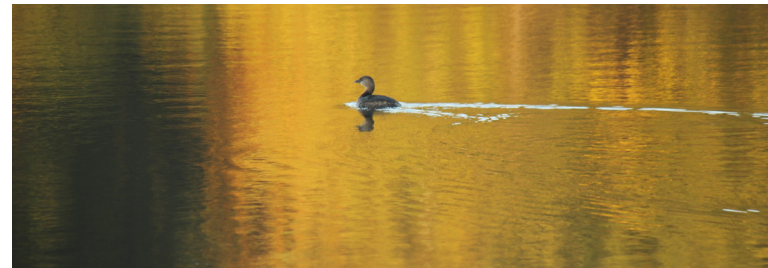
- Bernheim's 16,000+ acres protect over 73 ponds and wetlands, as well as over 91 miles of streams within our borders. Protecting these valuable resources from development, degradation, or destruction keeps these vital habitats intact, providing homes for flora and fauna. Conservation easements put on land purchases forbid the building of utilities or other developments, strengthening the protection Bernheim is available to offer.
- By preserving large forest areas underlined with limestone and covered by wetlands and forest, Bernheim gives water a chance to filter slowly and naturally. This purifies the water, and in turn provides cleaner, healthier water to local communities through nature's own

perfect infrastructure. In total, more than 21,723,000,000 gallons of rainwater are filtered at Bernheim annually, which purifies it for use by humans, plants, and animals throughout the area.

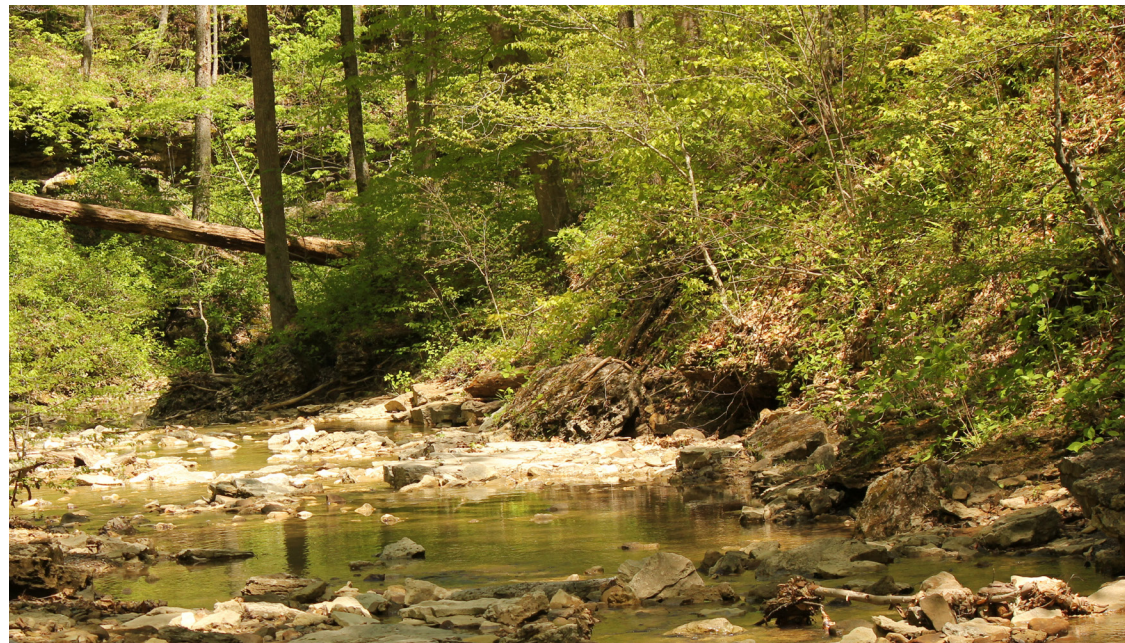
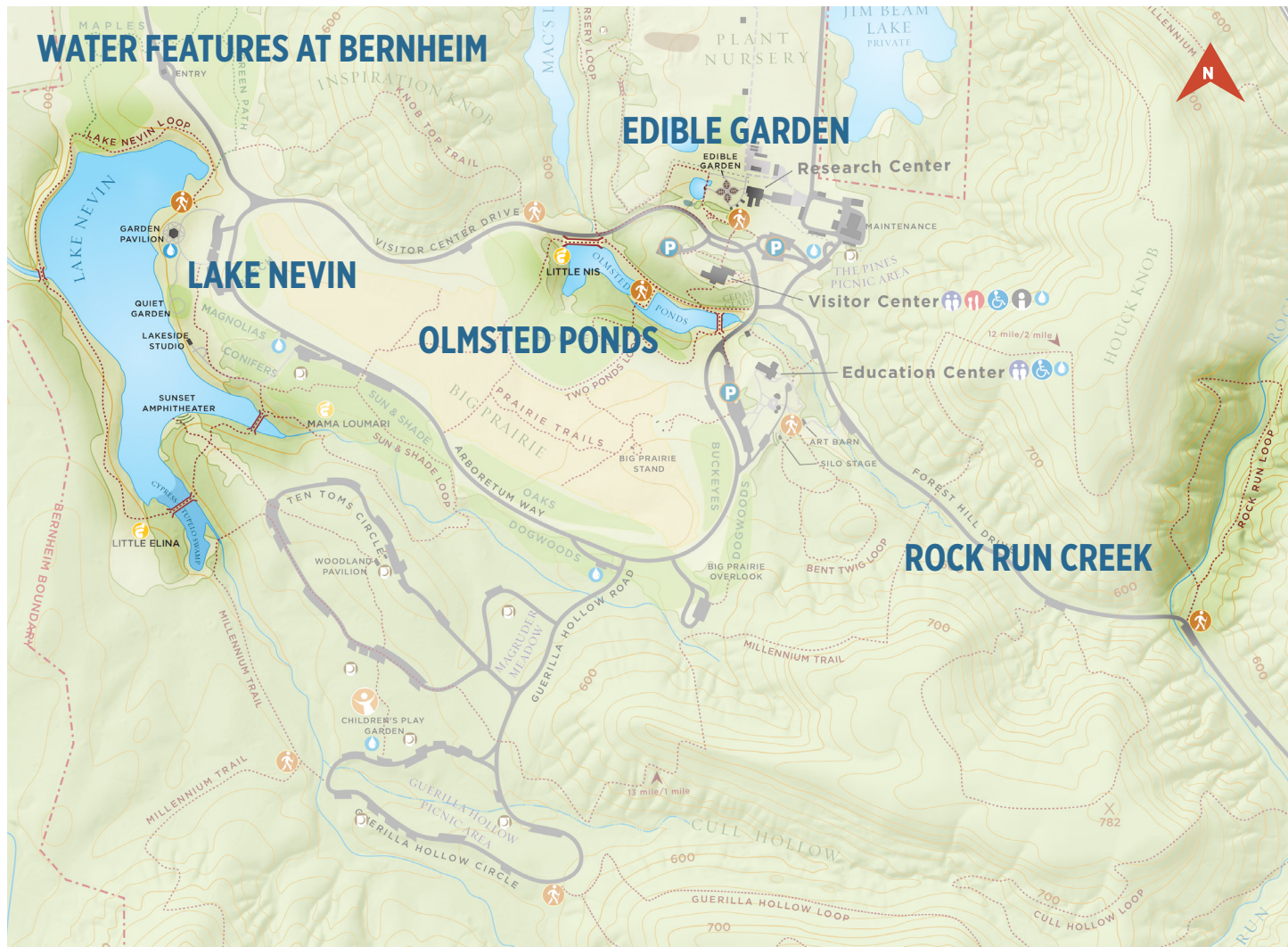
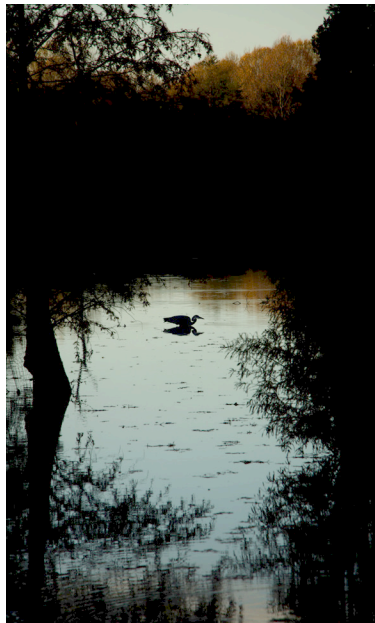
- Native plants require far less water than non-natives, as they have evolved to survive without human intervention in the climate of the region. By selecting primarily native plants or plants from similar climates that are accustomed to periods of drought and high summer temperatures, Bernheim dramatically reduces the need for watering our collections. These collections inspire our visitors to grow native plants.

- When watering is necessary, Bernheim pulls from our multiple ponds and lakes, which act as reservoirs. They catch water during periods of heavy rain and store it for use by our horticulture staff if there is a particularly dry season.
- Bernheim has expanded over nearly the last century, and land the organization has purchased is not always in pristine condition. It may be crisscrossed by old farmlands, or have streams that have been altered for human use. After making a land purchase, Bernheim experts carefully determine the most ecologically sensitive interventions and the best way to steward the habitats there. This leads to restoring habitats that were previously destroyed. Wetlands are created, streams cleaned up, and creeks returned to their meandering paths.

In sum, Bernheim offers visitors an extraordinary opportunity to explore and learn the whole story of one of our most significant treasures: water. We encourage you to explore the many places water is found here, and to learn about the numerous roles it plays in our lives. Come visit Bernheim and discover the beauty, poetry and science of water.

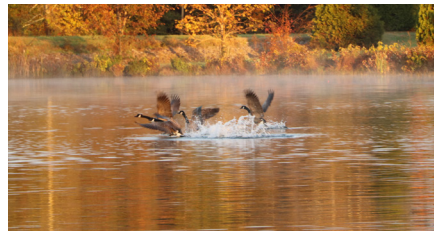
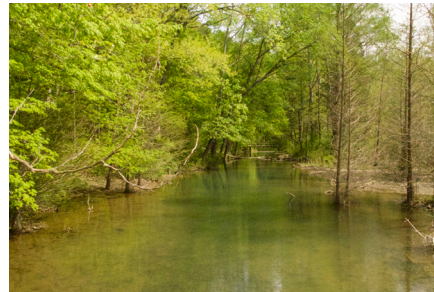


The story of water at Bernheim would fill many libraries, but if you just have a few hours to spare for discovery, here are some spots we recommend.



LAKE NEVIN: native swamp trees, engineering for climate change and pollinator habit

This 25-acre lake welcomes visitors when they first enter the park, and has been one of Bernheim's most recognizable features since opening to the public in 1950. Explored via a 1.3-mile loop trail, Lake Nevin is home to a wide variety of plants and animals, as well as examples of engineering that protects both humans and wildlife. In the wide-open waters, you will spot a variety of fish and waterfowl, while the swamps on the south end are the perfect places to find dragonflies, frogs, and turtles as well as swamp cypress. An emergency spillway was built on the northwest side of the lake in 2020, designed to handle 28 inches of rain in a 6-hour period. This is planned resiliency against climate change, meant to reduce flooding in the event of a heavy rain. To make sure this spillway is multi-functional — a basic principle of blue-green infrastructure design — the entire area was planted with a variety of wildflowers to serve as a pollinator habitat.



THE EDIBLE GARDEN: Water cycle, water conservation and regenerative design

Known for the thousands of pounds of organic vegetables farmed here each year, the Edible Garden is an excellent place to study how water can be conserved and used sustainably for healthy food production. It also meets the Living Building Challenge by collecting and using all water on-site through a thoughtful combination of cisterns, water-conscious planting design, pond reservoirs, solar powered pumps, and more. Follow signage through the garden to learn the cycle of water, both in nature and within the garden itself, while enjoying the sights, sounds, and smells of nature at work. Folks, DO try this at home!

OLMSTED PONDS: Wildlife sanctuary, flood prevention and reservoir

Named after the Olmsted Brothers (the sons of America's first landscape architect, Frederick Law Olmsted) who designed the ponds in 1939 as a part of Bernheim's original master plan. A highlight of the Arboretum, the Olmsted Ponds serve as a crucial habitat to many aquatic animals, including bluegill and bass, Canada geese, great blue heron, snapping and many other varieties of turtles, and a host of insect species. In addition to providing habitat, these ponds also act as reservoirs, collecting water during periods of heavy rain to prevent flooding. Conversely, during times of drought Bernheim can pump from the ponds to water the collections.



ROCK RUN CREEK AND TRAIL: Conservation, fossil science and biodiversity

Located within the Natural Areas, this 1/2 mile trail is the perfect place to dip your toes into water ecology, both literally and figuratively. Rock Run Creek has carved into the hillside through the millennia, and tells the geologic story of the power of water over time. Hike this trail to see the weathered limestone cliffs, and once at the bottom explore the creek bed to find the creatures that call this trail home. Crayfish, salamanders, frogs, fish, and invertebrates all reside here, as do the fossils of creatures who flourished millions of years ago. Rock Run's creek flows at times on the surface but also dips underground from place to place.



What Can You Do to Conserve Water?

Here are some ways that you can show you're a leader in water stewardship by helping conserve water in your daily life.

In the Kitchen

USE A DISHWASHER: They almost always use less water than washing dishes by hand. Install a dishwasher and only run it when it is full.

IF YOU ARE WASHING BY HAND: Get a sponge soapy and wet, then turn off the

water. Once you are ready to rinse, turn the water back on.

CHANGE

YOUR DIET: Far more water goes into the process of raising animals for human consumption than

goes into growing plants for consumption. To save water, eat lower on the food chain.

We waste about 40 percent of our total food supply every year, which also wastes 25 percent of all freshwater consumed annually -- don't waste food. And don't forget to buy from your local farmers or grow your own food.

In the Bathroom

TURN OFF THE FAUCET: Whether brushing your teeth or shaving, turning off the faucet when not actively using it helps conserve water.

INSTALL LOW FLOW FAUCETS, SHOWER HEADS, AND TOILETS: Lowering

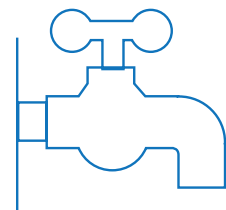
water flow can help with water waste. Flushing can be one of the biggest

water wasters in the house: Older toilets use 5-7 gallons a flush, while newer models only use about 2 gallons.

Around the House

ONLY RUN THE WASHING MACHINE WHEN YOU HAVE A FULL LOAD: Better yet, invest in a water and energy efficient model.

FIX LEAKS: Even with a minor leak, water is being wasted. A single dripping faucet can waste 20 gallons a day.



In Your Yard

INSTALL A RAIN BARREL: When set up under a gutter, rain barrels can catch 4 gallons of water a day. This is great for watering plants or washing cars.

XERISCAPING: When planting for aesthetics, choose native species. These won't require as much watering, as they are used to your climate, and provide wonderful habitat for native species. If you have plants with a wide variety of

water needs, plant them in groups according to how thirsty they are. Don't put drought-tolerant plants right next to water-loving ones.

DON'T WATER YOUR LAWN BUT IF YOU MUST, DO IT IN MODERATION AND WITH GOOD AIM. A shocking 30 to 60% of domestic drinking water is used to water yards and gardens, and often large portions are wasted by over-watering, evaporation, and misdirected sprinklers that water sidewalks and driveways.

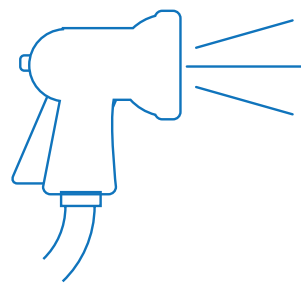
IF YOU HAVE TO WATER YOUR GARDEN OR LAWN, DO SO IN THE EARLY MORNING OR LATE EVENING: When you water in the middle of the day, much is lost to evaporation. Watering when it is cooler prevents this. For the same

reason, don't water on windy days.

DON'T USE SPRINKLERS: Often, sprinklers both overwater areas and waste water on driveways and sidewalks.

HAND WATER YOUR GARDEN, OR SET UP A DRIP IRRIGATION SYSTEM: This allows you to be more precise, and could cut water waste in half. Bonus: you'll

also find that hand-watering is a focused,



meditative activity that tunes you in to things you didn't even notice happening in the garden.

The James B. Beam Natural Water
Sanctuary Alliance at Bernheim
works for water to benefit nature,
society and the economy.

Bernheim 
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2499 CLERMONT RD CLERMONT, KY 40110 (502) 955-8512 / BERNHEIM.ORG

