

Ohio Environmental Education Fund Awarded Mini Grants SFY 2016

In the fall 2015 and spring 2016 funding cycles, Ohio EPA awarded the following 17 mini grants, for a total of \$71,633.

Benjamin Logan School District – Benjamin Logan High School, *The Riparian Zone and its Role in the Preservation of the Mad River as Important Trout Habitat*, F-16M-003, \$4,949, Champaign and Logan Counties, Audience: Pre-Kindergarten – University (grades 4-12), Contact: Spencer E. Reams, reamess@benjaminlogan.org, 937-935-2358.

Provides sampling equipment to help 400 students understand the role of the riparian zone in maintaining trout habitat in the Mad River. Students will test the soil to understand how nitrates and phosphorus migrate through the riparian zone to the River, and conduct laboratory experiments to analyze the impact of nitrogen, phosphorus and potassium loading on dissolved oxygen levels. They will also conduct field and laboratory studies of the effect of shading on water temperature, and continue to hatch brown trout eggs and raise and release the fry as part of the ongoing Trout in the Classroom program. The results of the project will be shared with the public and local media through a community night. Land owners will be targeted as an audience for the community night presentations. Ohio EPA will provide an in-service training for teachers county-wide in Project WET and the Healthy Water, Healthy People curricula. The Madmen Chapter of Trout Unlimited and the Logan Soil and Water Conservation District are collaborating.

Ohio River Basin Consortium for Research and Education, *“Environmental Workshop for Citizen Scientists: Water Status of Ohio River,”* F-16M-005, \$5,000, Statewide, Audience: General Public, Contact: Tiao J. Chang, chang@ohio.edu, 740-593-1462.

The proposed Environmental Workshop for Citizen Scientists at Youngstown State University will select twenty citizen scientists to participate in an educational workshop that will include the activities of Water Quality App developed by Northern Kentucky University; the Virtual Boat for Environmental Education in Ohio (VBEE-Ohio) developed by Ohio University’s civil engineering program with a previous OEEF grant. These Apps are designed to enable citizen scientists and schools that cannot travel to sample the Ohio River to conduct virtual sampling along with school groups while they are physically on the River sampling dissolved oxygen, E. coli, pH, total phosphate, nitrate, turbidity and total suspended solids. The workshop is being held in conjunction with and ORBCRE's 2016 scientific symposium at Youngstown State University.

The Friends of the Mahoning River, Northern Kentucky University, and Youngstown State University are collaborating.

Miamisburg – Bishop Leibold School, *Waste Not, Want Not*, F-16M-007. \$1,000, Montgomery County, Audience: Pre-Kindergarten – University (grades 4-8), Contact: Linda L. Hillinan, lhallinan@bishopleiboldschool.com, 937-434-9343.

Students will design, build, and maintain a compost system using school cafeteria waste. They will also create and conduct multiple "design of experiments" to find out the most efficient composting method with the use of technology to better understand the conservation of mass and energy of the biomass that they are creating. Lastly, they will educate their parents at an open house in the spring with a short presentation and a pamphlet designed by the students, as well as educate our other sister school on the benefits of composting. The end product will be used by the Mission of Mary farm cooperative, which supplies fresh organic vegetables to the underserved Dayton community. Approximately, 335 students and parents from two campuses and the community will benefit from this project.

Put-in-Bay Township Park District, *Lake Erie Island Water Trails*, F-16M-009, \$4,918, Erie and Ottawa Counties, Audience: General Public, Contact: Lisa Brohl, lakbrohl@gmail.com, 419-366-2087.

The National Park Service has been working with multiple partners to develop a Lake Erie Islands Water Trails Guide, a defined paddling route with public access sites, safety and natural/cultural history information. Grant funds will support publication of the guide and interpretive signs at each access point, providing information on cultural and natural history, critical habitat resources, invasive species, harmful algal blooms and human impacts on water quality. The Guide will encourage recreational users of the Lake Erie Islands to do it safely, reduce conflicts with private property owners, protect vulnerable natural resources and encourage stewardship. Collaborators include the National Park Service, Ohio Clean Marinas Program, Ohio Chapter of the American Canoe Association, Ohio Sea Grant, and the Put-in-Bay Chamber of Commerce & Visitors Bureau.

Wayne Township, Warren County, *Name that Stream*, F-16M-010, \$2,500, Warren County, Audience: General Public, Contact: Amy Cameron, amy.cameron@co.warren.oh.us, 513-695-3086.

Seeks to promote watershed awareness among 8,500 residents and commuters by placing 43 identification signs at locations where roads cross tributaries of the Little Miami River. To encourage stewardship and connection with the local watershed, mailings to Township residents will include backyard conservation

tips for keeping waterways clean, including best management practices addressing fertilizer use, pet waste and vegetative stream buffers. The project will also include guidance on how residents can get an un-named tributary a name through the U.S. Geological Survey. The Warren Soil and Water Conservation District is collaborating.

Fairfield Soil and Water Conservation District, *Interactive Education Experience*, F-16M-011, \$1,500, Fairfield County, Audience: General Public, Contact: Tommy Springer, tspringer@fairfieldswcd.org, 740-653-8154.

The Interactive Education Experience will include purchasing Audience Response System equipment that Fairfield SWCD staff can use to educate several thousand primary and secondary students on environmental issues such as soil health, water quality, stormwater pollution prevention, environmental health, and knowledge of threatened and endangered species. This will be used to supplement teacher-led lessons aligning with Ohio's New Learning Standards. Several hundred farmers, landowners, MS4 community members and wildlife-interested audiences will also be reached through various field clinics and public programs presented annually on ways to reduce stormwater pollution, soil runoff, and nutrient loading, and ways to promote general pond and environmental health. This equipment is a wireless response system that promotes lively interaction during the presentation by giving the audience the ability to answer questions and submit answers electronically via hand-held devices. It can also be used for pre- and post-testing and store a summary of results, to improve the assessment of what is being learned in these programs.

Wayne Trace Local Schools, Grover Hill Elementary, *Water and Soil Quality Education*, F-16M-012, \$4,900, Paulding County, Pre-Kindergarten – University (grades 4-6), Contact: Wendy L. Baker, bakerw@wt.k12.oh.us, 419-587-3162.

Teachers will work with students in grades 4-6 to collect samples and analyze turbidity, temperature and nutrient loads and headwater macroinvertebrates from Town Creek in the Little Auglaize watershed. Their research will parallel and support an ongoing study by the Defiance Soil and Water Conservation District of nonpoint source nutrient pollution in the larger Maumee watershed contributing to algal blooms in Lake Erie. Grant funds will support installation of a floating aluminum dock and gangplank that will allow students to safely collect samples from deeper water at midstream rather than on a steep streambank, for a more accurate reading of nutrient and sediment conditions. Prior to installation,

students will work with the County Engineer to conduct an engineering design project listing materials and methods, building models and testing outcomes to prevent erosion of the creek bank while allowing stable construction of the dock structure. In this career exploration unit, students will see how engineers study stream erosion, ditch construction and slope for public works projects that take into account floodplains, soil quality and heavy traffic.

Cardington-Lincoln Local Schools – Cardington Jr. High, *Quality Water for Quality Life*, F-16M-015, \$4,926, Morrow County, Audience: Pre-Kindergarten – University (grades 3-8), Contact: Beau Michael Wolford, beau.wolford@cardingtonschools.org, 419-864-0609.

Provides equipment to help 150 students learn about water quality in Morrow County by studying the micro- and macroinvertebrate life in local streams. Students will keep journals and logs documenting specific types and numbers of organisms discovered, dissolved oxygen levels, pH levels, and other important variables that determine water quality. The project will incorporate activities from Project WET, Healthy Water, Healthy People, Project WILD Aquatic, and the University of Wisconsin's Exploring Streams curriculum, and culminate in a stream and river clean up to improve the water quality in our community. The students' research findings will be published in the school newsletter and their data shared with students in New Mexico through the RiverXchange www.riverxchange.com project.

Cleveland Metroparks, *Food Forest at Rocky River Nature Center*, F-16M-016, \$5,000, Cuyahoga County, Audience: General Public, Contact: Valerie Fetzer, vjf@clevelandmetroparks.com, 440-734-6660.

Cleveland Metroparks plans to create a Food Forest at Rocky River Nature Center using Permaculture techniques. A Food Forest is similar to an orchard but is not reliant on humans for growth and care. It is a sustainable system which includes a wide diversity of plants and animals that support and complement the needs of one another. This forest will include trees and understory plants that produce nuts and fruits for consumption by humans and wildlife, as well as those that attract pollinators and provide habitat for local species. It will serve as the backdrop for school programs and a series of 11 adult education programs on backyard conservation, including topics such as native gardening, edible gardening, sustainable food systems, local habitat conservation, soil and rainwater retention, and permaculture. Over 176,000 people visited the nature

center at Rocky River in 2014, which made it the most visited center in all the Cleveland parks.

Alliance for Leadership and Interconnection (ALI), *Green STEM Programs*, F-16M-017, \$4,621, Butler, Clermont, Hamilton and Warren Counties, Audience: Pre-Kindergarten – University (grades K-12), Contact: Calvin Williams, cwwilliams43@gmail.com, 513-541-4607.

Provides equipment, science kits, software and promotional materials to support Green STEM Fairs for six Southwest Ohio school districts, and STEM Eco-Mentoring Programs for 2,500 students in Cincinnati Public Schools. Through Green STEM Fairs, adult mentors engage small groups of students with introductions to green technologies and green careers related to energy conservation. In weekly STEM Eco-Mentoring after-school programs for grades 4-6, adult mentors such as LEED architects and engineers provide hands-on, in depth training in green technologies and green careers, and assist students with presentations for a culminating community event. Students study utility bills to measure energy use by their school building; use Watt meters to measure how much energy an appliance uses and calculate the cost to operate it; check for energy “vampire” electronic devices that are constantly using energy in stand-by mode; measure light in foot candles within buildings; use air monitoring equipment to detect pollutants; and assemble and compare the efficiency of toy fuel cell and solar cars.

Delaware City Schools – Dempsey Middle School, “Dempsey Ecology Project,” S-16M-021, \$5,000, Delaware County, Audience: Pre-School – University (grades 7-12), Contact: Paul Martin Olen, olenpa@delawarecityschools.net, 740-417-6478.

The focus of the Dempsey Ecology Project is on teaching forest and wetland ecology while actively eradicating alien invasive species (AIS) from the 50 acre forest and mitigated wetland area behind Dempsey Middle School. The area includes an intermittent headwater tributary to the State Scenic Olentangy River. This award-winning program was begun in the spring of 2014. U.S. Forest Service, Delaware SWCD, ODNR, Division of Wildlife, Delaware County Preservation Parks, Ohio Wesleyan University, Olentangy Watershed Alliance and Big Brothers Big Sisters of Central Ohio are all collaborating.

Lake County Stormwater Management Department, “Training & Education Materials for Municipal Staff,” S-16M-024, \$4,986, Lake County, Audience: Regulated Community, Contact: Susan Haboustak, susan.haboustak@lakecountyohio.gov, 440-350-5902.

Funding would be for adapt materials to provide more user-friendly training and education for municipal operations staff/employees. Our project includes printing of more customized posters and vehicle guides describing stormwater Best Management Practices (BMPs) and pollution prevention; laptop and projector for educational workshops. All materials will include local imagery to encourage a community appeal and cover the following topics: spill response, installation of sediment and pollution controls during construction, final vegetative stabilization, stormwater pollution prevention during lawn care and fertilizer use. Lake County Engineer, SWCD, General Health District, Planning & Community Development, Chagrin River Watershed Partners, Inc. is collaborating.

Meigs SWCD, “AWARE – Assessing Water and Rural Environments,” S-16M-026, \$4,836, Meigs and Athens Counties, Audience: Pre-School – University (grades 2, 4, 7 and 9-12), Contact: Jenny Ridenour, jenny.ridenour@oh.nacdnet.net, 740-992-4282.

This project will add resources to teach students about how pollution affects our streams and rivers. The resources are hands on kits that are reusable and can be used at different grade levels. The project will focus on second grade, fourth grade, seventh grade and high school. These grade levels have the most focus on water, erosion, pollution, and methods to collect data on water. The younger grade levels will relate water to the ecosystems including plant and animal life. The older students will investigate how water becomes polluted and ways to prevent the pollution. Project WET and Healthy Water, Healthy People will be used for educating teachers. Meigs County General Health District and OSU Extension along with Athens SWCD are collaborating.

Clark County Solid Waste District, “Water and Wetlands Teacher Workshop,” S-16M-029, \$4,050, Clark County, Audience: Pre-School – University (grades K-12), Contact: Steve Schlather, sschlather@clarkcountyohio.gov, 937-521-2022.

The Clark County Solid Waste District and the Clark County Parks District plan to offer a workshop in fall 2016 to introduce primary and secondary teachers in Clark County to the Healthy Water Healthy People (HWHP) and Wonders of Wetlands (WOW) curricula. Lessons demonstrated will focus on water runoff, wetlands, water cycle, nonpoint source pollution, and watersheds. The workshop also will include a demonstration of an Enviroscape Model, which will be available to teachers as a hands-on tool. The workshop will offer six contact

hours and will be held at George Rogers Clark Park, allowing us to use the creek in the park as a setting for at least one activity, weather permitting. We plan to ask participants to introduce the curriculum to their colleagues and provide a brief report on how they used the curriculum in class. Clark County Park District and Montgomery SWCD are both collaborating.

Sycamore Community Schools – Symmes Elementary, “A Year on the Trail: A Field Investigations Approach to EnviroEd Using Nature Trail at Symmes,” S-16M-030, \$3,447, Hamilton County, Pre-School – University (grades K-4), Contact: Steve Reinke, reinkes@sycamoreschools.org, 513-316-3650.

Grant will directly facilitate the environmental education of 500 K-4 students in Symmes Elementary (as well as the 1,500 in attendance in Sycamore Community Schools' three other elementary buildings) by helping train teachers and fund ongoing scientific inquiry and monitoring of the Nature Trail at Symmes, a nine acre wooded watershed owned by the district. The trail's continuing restoration and removal of invasive species provides hands-on opportunities for even the youngest to design and conduct field investigations to help determine the effect and direction of the renewal efforts. They will then communicate these efforts to the community at large at the end of the school year. Teachers, referencing materials from Project Learning Tree and Project Wild, will be trained to use the monitoring equipment to help the students gather, organize, and interpret data they have collected. PTO, Werthaiser Family and Primrose School of Symmes are all collaborating.

BrainBox LTD., “Landlord Training Event,” S-16M-033, \$5,000, Hamilton County, Audience: General Public, Contact: Lauren Campbell, contact@brainboxltd.com, 765-624-8456.

Host a landlord training event, targeting large (5 units or more) multi-family property owners/landlords/property managers, educating on the benefits of incorporating sustainable initiatives on their properties and providing resources that they can pass along to their tenants. The topics of focus will be sustainable lawn care, stormwater management, energy efficiency, air quality, curbside and commercial recycling options. There will also be a legal component to help develop lease language to hold tenants accountable. Primary audience is property owners and land lords, the secondary audience is adults generally, as we anticipate their tenants will also receive information. City of Cincinnati, U.S. Green Building Council, Mill Creek Watershed Council and Hamilton County Environmental Services are all collaborating.

Hathaway Brown School, “For the Birds: Restoration, Exploration and Creative Play in Nature for Early Childhood Learners,” S-16M-036, \$5,000, Cuyahoga County, Audience: Pre-School – University (Pre-School), Contact: Victoria (Torrey) McMillan, tmcmillan@hb.edu, 216-932-4214.

This project will restore a small section of Hathaway Brown's (HB) 16 acre suburban campus that is dedicated as a bird sanctuary. The space currently is lightly wooded with some shrubs and lawn beneath it. We want to enhance the bird and pollinator habitat by removing non-native species and planting additional native perennial herbaceous plants and shrubs that will create an edge/woodland habitat to invite in birds. The space will also be designed as a nature exploration and play space for our Early Childhood program, which will develop (with guidance from Shaker Lakes Nature Center) and implement expanded nature play, exploration, and stewardship curriculum using the space. Grant funds would be used for the habitat restoration materials and site work. HB will provide significant matching funds. Project end date is listed as 10/2017. At this point the project will be substantially complete, but HB will continue to deliver short professional development workshops thru 2019. Nature Center at Shaker Lakes is collaborating.

For more information, contact:

Ohio EPA Office of Environmental Education



oeef@epa.ohio.gov

www.epa.ohio.gov/oeef

614-644-2873