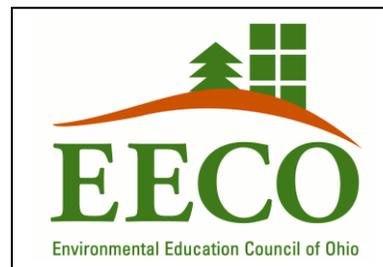


Ohio Environmental Education Fund Statewide Partnerships in SFY 2011

Environmental Education Council of Ohio, \$83,300



In 1995, Ohio EPA's Office of Environmental Education initiated a long-term partnership with EECO to build statewide capacity for environmental education in ways that could not be accomplished within the confines of a two-year general grant. Through this seventeen-year partnership, OEEF and EECO are able to provide professional development opportunities for teachers and non-formal environmental educators, as well as quality curriculum resources aligned with the Ohio Department of Education's Academic Content Standards. For K-12 education, the partnership continues to focus on the STEM disciplines (science, technology, engineering and mathematics), but in recent years has added additional outreach initiatives in social studies, language arts and other areas. Since 2006, the partnership has also strengthened its initiatives for adult environmental education in the state.

Structure

A six-member **partnership steering committee** sets partnership goals in consultation with the EECO Board of Directors and the OEEF Advisory Council. The committee includes the EECO Executive Director and the Chief of Ohio EPA's Office of Environmental Education, and the chairmanship alternates between OEE and EECO representatives. The partnership supports part-time **regional directors** in each of the state's 12 education regions, who work closely with teachers and environmental educators at the local level to offer workshops and share teaching resources. A network of **contacts in more than 2,000 school buildings** helps to publicize and distribute the partnership's materials statewide. A **partnership insert** in the EECO newsletter goes out three times each academic year to educators statewide, promoting cross-pollination between the OEEF grant programs, the products resulting from outstanding environmental education grant projects, and EECO conference and workshop opportunities.

Workshops and Programs

Partnership funds made it possible to offer **57 regional professional development workshops and school presentations in SFY 2011 to 2,548** participants, offering teachers certification in nationally recognized curricula such as *Healthy Water, Healthy People*, www.healthywater.org; The Leopold Education Project, www.lep.org; Project Learning Tree, www.plt.org; Project WET (Water Education for Teachers), www.projectwet.org; Project WILD, Project WILD Aquatic, Flying WILD, WILD School Sites, and *Science and Civics: Sustaining Wildlife*, all at www.projectwild.org. This year the partners promoted

new early childhood modules from Project WILD and Project Learning Tree. Other teacher workshops offered training in programs developed specifically for Ohio, such as Master Composting, Vermi-composting, Dig in Soils, Insects, Science Through Stories, Geology Rocks, Taking Care of Nature's Resources, and Animal Adaptations. School presentations included demonstrations of water quality monitoring techniques and the EnviroScape® watershed model and Ohio Wildlife History model, and many presentations on environmental careers. EECO and OEE presenters also frequently demonstrate other hands-on models such as the EnviroScape® drinking water and wastewater treatment models, storm drain models, soil tunnels, and the EnVision 3100® ground water flow model, at teacher conferences and school or career day events.



EnviroScape® watershed model



Ohio Wildlife History Model



EnviroScape® drinking water model



ground water flow simulator

To most effectively reach a wider audience and avoid duplication of effort, the partners work closely with local environmental educator collaboratives such as the Earth Day Coalition in Cleveland, the Delaware Environmental Education Partnership (DEEP), Greater Cincinnati Environmental Educators (GCEE), Terrific Resources for Environmental Education (TREE) in Columbus, and the Tri-County Environmental Educators in the Youngstown area. These collaboratives offered **regional resource fairs** for teachers, afterschool care providers and home schoolers, and exhibited or presented at **26 special events and conferences** with 14,472 participants, including the Cincinnati Paddlefest, Cleveland Burning River Festival, the Dayton Children's Water Festival, Central Ohio Children's Water Festival, community earth day events, harvest fairs,

country living days, and local sustainability fairs. Local collaborators include soil and water conservation districts, solid waste management districts, county extension offices, health departments, zoos, nature centers, botanical gardens, and recycling and litter prevention offices.



Children's Water Festival Columbus



GCEE Resource fair for teachers

Adult education opportunities also included **11 OEEF grant writing workshops** offered around the state last year, reaching a total of 331 participants. EECO's assistance in hosting and publicizing these workshops has been instrumental in helping the OEEF increase the number of grants awarded in under-served counties.

Conferences

EECO's April, 2011 **annual conference** at Maumee Bay State Park featured the theme "Charting a Course for the Future in EE." Sessions were tailored to the needs of EECO's different constituencies: business, industry and trade associations; environmental and community-based organizations; EE and outdoor education organizations; government agencies; higher education; pre-school, elementary and secondary education; and environmental education research.



Keynote speakers, workshops, field trips and concurrent sessions helped the participants learn to tailor education programs to most effectively engage audiences of different ages, backgrounds, and interests. EECO's annual conference also honors the legacy of the Ohio Alliance for the Environment, offering an **environmental issues forum** as an opportunity for balanced discussion of current topics. This year's forum featured discussion of Green Energy, Sustainability, and Threats to Lake Erie and the Great Lakes from invasive species, pharmaceuticals in wastewater, and harmful algal blooms.



Sampling water quality and benthic invertebrates at OSU's Stone Lab



Asian Carp



Zebra mussels



Phragmites invade Lake Erie marshes



Winous Point Wetlands



Poster from pharma-waste collection event



Algal bloom in west basin of Lake Erie

This year's conference also highlighted the national No Child Left Inside movement, promoting outdoor learning and increased environmental education content and funding in teacher preparation. EECO is working with local Leave No Child Inside collaboratives in many Ohio cities, and drafting a **state environmental literacy plan** with their assistance.

Ohio EPA and the Ohio Departments of Education, Health, Natural Resources and Transportation are supporting this effort as a way getting students outdoors, inspiring them to explore STEM (science, technology, engineering and mathematics) careers, building on their interest in environmental concerns, and exposing them to field investigation techniques.



Regional Conferences

The partnership also provides financial support for three regional conferences for teachers and non-formal educators: the “**Winter Snow, Out We Go**” conference at Camp Nuhop in northeast Ohio in February; the “**Black Swamp Educators’ Extravaganza**” in northwest Ohio in June, sponsored by a number of soil and water conservation districts; and the “**101 Alternatives to the Chalkboard**” conference at YMCA Camp Kern in Oregonia (southwest Ohio) in October. This year’s Winter Snow conference featured the theme “Arts and Sustainability,” showing teachers how to use visual and performing arts to complement environmental science lessons, and how lessons like a physics bottle launcher can be demonstrated outside even in snowy weather. The 101 conference featured the theme “Generations of Inspiration” and honored long-time environmental educators from across the state.



Ohio EPA-Environmental Education Council of Ohio Partnership Regional Priorities



Region 1: urban/multicultural, language arts
 Region 2: high school, environmental careers
 Region 3: social studies, environmental careers
 Region 4: urban/multicultural, environmental careers
 Region 5: pre-service teachers
 Region 6: language arts

Region 7: adult education
 Region 8: urban/multicultural, environmental careers
 Region 9: pre-service teachers, high school
 Region 10: high school, environmental careers
 Region 11: adult education, environmental careers
 Region 12: early childhood, urban/multicultural

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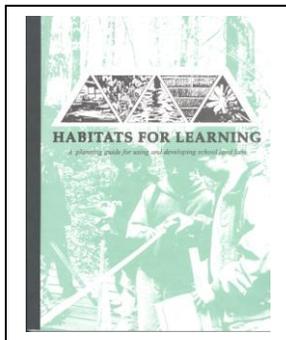
Targeting Outreach to Specific Audiences

While environmental education continues to be most closely associated with science, in 2001, EECO identified five under-served audiences for K-12 environmental education: **urban/multicultural, language arts, social studies, and the high school, and early childhood** age groups. The partnership continues to focus on providing special initiatives to support educators in these five areas. Regional directors are working with local teams in each of the state's 12 education regions, to concentrate their efforts on special initiatives to reach these audiences. In 2006, **environmental careers** and **adult education** were added as additional targets. Partnership funds helped EECO leverage an additional \$52,000 over the past four years in federally-funded EETAP (Environmental Education and Training Partnership) grants from US EPA. Partnership goals for 2010-2011 have been aligned with this effort to include a new focus on **pre-service teacher preparation**.

Target Audience: Urban/Multicultural

In Region 1, the partnership sponsors an Urban Environmental Learning Collaborative (UELC) of local EE provider organizations working with after-school programs serving Columbus Public Schools students. The team developed 20 travelling trunks of supplies and trained after-care educators to provide activities from Projects WET, WILD, and Learning Tree and OSU Extension.

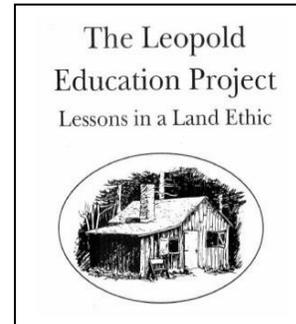
The Region 8 team identified as its primary stakeholders the teachers and students of the Cleveland Municipal School District. They have been training teachers in a number of standards- and inquiry-based activities that can take place outdoors, such as bird banding, water quality monitoring, and biological surveys. The team is working closely with the Earth Day Coalition's Student Environmental Congress, the Nature Center and Shaker Lakes, and local community organizations to create a new outdoor learning area and environmental education center at the East Cleveland location of the U.S. Army Corps of Engineers Dike 14 dredge spoils disposal site along Lake Erie.



The Tri-County Environmental Educators network in the Youngstown/Warren area (Region 12) has been supporting the development of outdoor learning areas in several urban schools, utilizing *Habitats for Learning: A Planning Guide for Developing and Using School Land Labs* that EECO developed with an OEEF grant that was selected as an Outstanding Project.

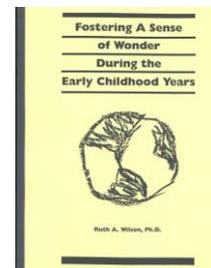
Target Audience: Language Arts

"**The Language of Nature,**" a summer writing institute for language arts teachers, was offered for the eighth time in July at Cuyahoga Valley National Park, with sessions on nature writing and photography, naturalist interpretation, and teaching activities from the Leopold Education Project, which features journaling and environmental ethics components. Sessions included fiction, nonfiction, poetry and journaling. Funding from the partnership has helped to leverage additional support from the Ohio Humanities Council for this institute.



Target Audience: Early Childhood

This year the partnership provided training for the regional directors in two exciting new curricula, "Growing Up WILD" from Project WILD, and "Environmental Experiences for Early Childhood" from Project Learning Tree. A number of educator workshops are being offered to teachers and Head Start educators around the state. The partnership also promotes and distributes copies of *Fostering a Sense of Wonder During the Early Childhood Years*, developed by Dr. Ruth Wilson at Bowling Green State University with OEEF funding, and selected as an OEEF Outstanding Project resource for educators.



Target Audiences: Social Studies and High School

An “**Environmental Education and the Social Studies**” **slideshow** is featured at conferences and posted on the OEE, EECO and Project WILD Facilitator Web sites, to showcase activities from well-known curricula that can be used to meet Ohio social studies content standards. The partners also demonstrate ODNR Division of Wildlife’s tabletop model and poster timeline of “**Wildlife in Ohio History**” at teacher workshops, school career days and various public events. The timeline helps elementary students learn how animal and plant species have flourished or been extirpated in Ohio.

“Water Court”
Project WET

- Students participate in a mock court to settle water quality and quantity disputes.
- Demonstrates how disputes can be settled through mediation or litigation.
- Evaluate arguments presented by opposing sides
- (Middle and high school)



Geography
using migratory
birds and butterflies

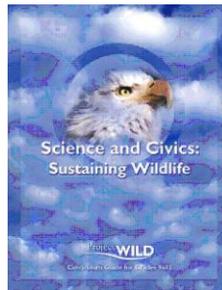
- *Journey North*
www.learner.org/jnorth/current.html
- *Monarch Watch*
www.monarchwatch.org
- “Back from the Argentine” *Leopold Education Project*, www.lep.org



Wildlife in Ohio History



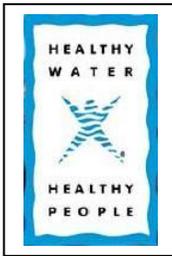
At the high school level, the partners are helping the ODNR Division of Wildlife promote **Project WILD’s Science and Civics: Sustaining Wildlife** curriculum where high school biology, history, economics and government classes collaborate on service learning projects to benefit wildlife in the local community. Learning activities are aligned with the state academic content standards for science and social studies.



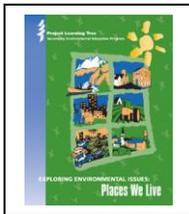
Target Audiences: Environmental Careers

The partnership is intensifying its efforts to introduce Ohio students and teachers to **careers in environmental science and engineering**, in tune with the state’s current priority on STEM (science, technology, engineering and mathematics) disciplines and preparing students to meet the needs of employers. Careers education is also an important theme throughout the Ohio Department of Education’s academic content standards. The partnership works with businesses and with the 21 state and 9 federal agencies participating in the Ohio Inter-Agency Council for Environmental Education (OICEE) to help schools

recruit environmental professionals as collaborating partners and career role models. Partnership funded workshops show teachers how to use authentic science data and technical methods in the classroom.



For example, Project WET and *Healthy Water, Healthy People* activities have students test their drinking water or local streams for various parameters and compare their results with official sampling data from Ohio EPA and local water purveyors.



Activities from Project Learning Tree's secondary education modules on forest ecology, risk assessment, energy, and local environmental issues also include significant career components.

The Ohio Environmental Education Fund has made environmental careers one of its six priority areas for awarding grants. Six of the twelve EECO regional directors added careers education as a focus for their local outreach committees. The Ohio Department of Natural Resources "Real World Learning" Web pages at <http://ohiodnr.com/tabid/18945/Default.aspx> feature profiles of conservation professionals, their training and current projects.

Target Audience: Pre-Service Teachers

EECO and Ohio EPA are supporting the North American Association for Environmental Education's efforts to incorporate stronger environmental education components in the accreditation standards of colleges of education by the National Council for Accreditation of Teacher Education (NCATE). Partnership funds were used to leverage five years of federal funding from the Environmental Education and Training Partnership (EETAP), for state capacity building. Pre-service teacher preparation is the current focus of that grant, and the partnership goals have been expanded to include this new audience as well. The partners are working to certify education faculty members from different Ohio colleges and universities in Project Learning Tree, Project WET, Project WILD, and *Healthy Water, Healthy People*, so that a new generation of teachers will become familiar with these excellent teaching resources. The OEEF has funded alignment of all these curricula with the Ohio Department of Education's academic content standards for science and social studies education. These correlations are posted at <http://www.dnr.state.oh.us/education/correlations/> and are being updated to keep pace with ODE's 2010 revisions to the science standards.