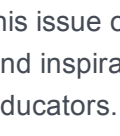




TEACHING GREEN



TOM WOLF, GOVERNOR • PATRICK MCDONNELL, DEP SECRETARY

Welcome, Educators!

From free workshops to a new professional network, this issue of *Teaching Green* offers resources, ideas, and inspiration to Pennsylvania's environmental educators. Whether you're back to school in the K-12 or college classroom or out in the community, teaching children or adults for the organization or local government, we wish you and your students happy, productive adventures in environmental learning.

Have questions or suggestions regarding the newsletter or the Environmental Education Center? Just drop me a line at gmeyers@pa.gov. I look forward to hearing from you. And please consider sharing Teaching Green with other educators. Thank you!

— Bert Myers, Director, [Environmental Education and Information Center](#), Department of Environmental Protection, Harrisburg

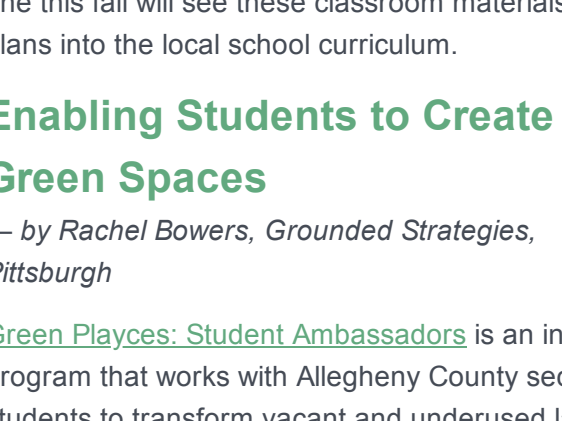


How We Did It

Stories from Environmental Ed Grant Projects

DEP has provided more than \$11 million in funding to schools, municipalities, and community organizations for environmental education projects in Pennsylvania since the [Environmental Education Grant program](#) began in 1993. Here are just a few of hundreds of successful projects DEP has supported.

We'll share more success stories in future issues to spark your creativity, and when another grant round opens, we'll announce it here and on the [DEP Newsroom](#).



Getting Everyone in on Stream Water Quality Data

— by Dr. Holly Travis, [Western PA Watershed Collaboration Project](#), Indiana University of Pennsylvania (IUP)

This fall the [Western PA Watershed Collaboration Project](#), based at IUP, begins its second year of monitoring streams in the Stony Run watershed in Indiana County. Our goals are to develop student scientists and watershed-smart citizens and help get local streams off the impaired-status list by doing so.

Elementary, secondary, and college students, in partnership with IUP faculty and grad students, will monitor biological and chemical water quality, flow rates, stormwater events, and the impact of remediation projects. They'll submit the data to a shared database and perform data analysis.

Not only does this project provide hands-on meaningful watershed education experiences, but the data inform policy discussions by local governments and environmental organizations, as participants share stream assessment findings with community groups through the Stormwater Education Partnership.

We've also held two Act 48 teacher workshops to develop a standards-based curriculum, and a third one this fall will see these classroom materials completed, incorporating new water quality lesson plans into the local school curriculum.

Enabling Students to Create Safe Green Spaces

— by Rachel Bowers, [Grounded Strategies](#), Pittsburgh

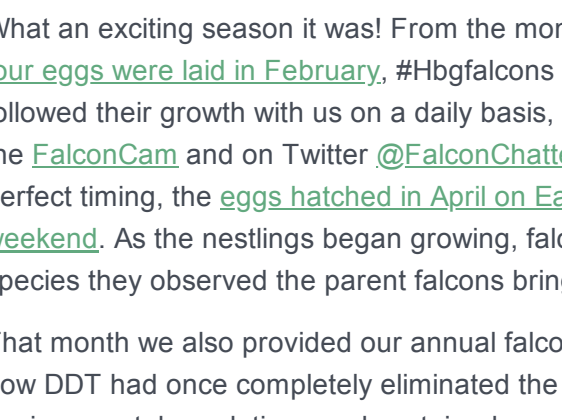
[Green Playces: Student Ambassadors](#) is an in-school program that works with Allegheny County secondary students to transform vacant and underused land on or near their school grounds into safe and creative places.



In the 2017-2018 school year, student ambassadors in two fifth-grade classes at Twin Rivers Intermediate School in McKeesport transformed an unused courtyard space into a meditative space, with outdoor seating that observes a landscaped area with native pollinator plants.

Fifteen students at Propel Andrew Street High School in Homestead transformed a vacant lot that is home to the school's beekeeping class and apiary. They chose to make the space more community-oriented by adding seating and gathering spaces, as well as to celebrate the bees with a bee-themed mural and pollinator gardens.

Through Green Playces projects, students learn the process of designing, planning, and building green spaces for their school community. They examine environmental justice issues, such as land use, air quality, and water quality, and are introduced to the green economy. Students leave the program with the tools to engage their community with a deeper understanding of environmental justice issues.



Teaching Deep Local Connections to Climate Change

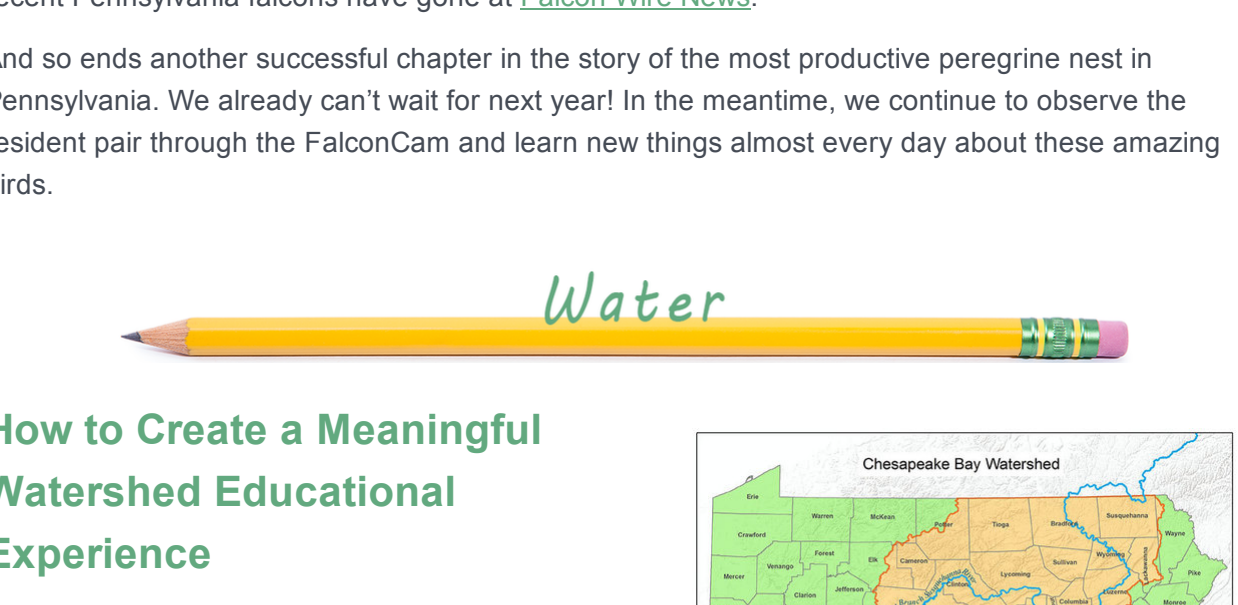
— by Diane Motel, [Wildlands Conservancy](#), Emmaus

Through the ["Climate Change in Our Watershed"](#) project, the [Wildlands Conservancy](#) provided place-based climate education to middle school teachers and students to help them develop a deep, local connection to environmental issues and the skills and knowledge to create personally relevant collective actions.

Using Project Learning Tree's Climate Change training, we provided a professional development workshop to classroom teachers and naturalists. We delivered watershed-focused climate change programs to over 500 middle school students, having groups rotate through 5 stations: climate change 101, a [topo map/augmented reality box](#), an eco-chamber lab, a local effects hike, and a citizen science lab. We addressed the climate change literacy challenge by weaving a social media component through this STEM-centered project focused on personal efficacy.

Harrisburg Falcons

Newest Falcons Soar the Skies



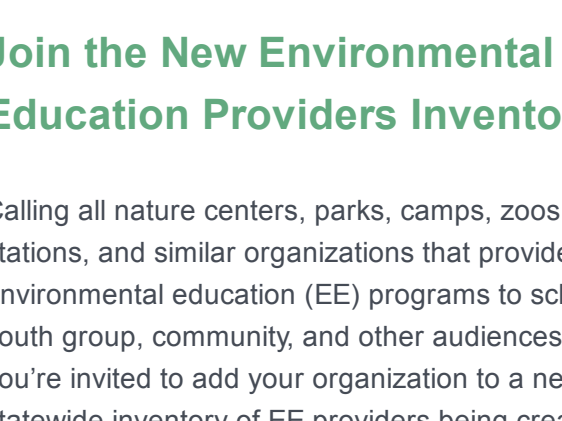
Life's pretty quiet these days at the Harrisburg peregrine falcons nest on the 15th floor here at the Rachel Carson State Office Building. Having raised another set of fledglings, our longtime resident pair are back to being empty-nesters.



What an exciting season it was! From the moment [four eggs were laid in February](#), #Hbgfalcons fans followed their growth with us on a daily basis, through the [FalconCam](#) and on Twitter [@FalconChatter](#). With perfect timing, the [eggs hatched in April on Earth Day weekend](#). As the nestlings began growing, falcon fans used an [online survey](#) to document the bird species they observed the parent falcons bringing to the nest for feeding.

That month we also provided our annual falcon workshop to 27 teachers and educators, who learned how DDT had once completely eliminated the peregrine population in the Northeast and how environmental regulations and sustained organizational efforts helped restore this species.

The nestlings became juveniles in almost the blink of an eye, and in May it was time for the annual banding event by DEP and the Pennsylvania Game Commission. Students from Pine Grove High School participated, helping perform a health check on the young birds and tag them White, Red, Yellow, and Blue. Fans joined in the conversation online via our [Facebook livestream](#).



As the fledglings developed their flying skills, local volunteers, led by Sue Hannon, partnered with us for the annual Falcon Watch and Rescue effort. They spent many hours observing the juveniles during this vulnerable period. It wasn't uncommon to see volunteers with binoculars sitting in lawn chairs on the sidewalks around RCSOB. That's dedication.

White, the smallest of the four, struggled with fledging and had to be rescued twice but, after some time was observed flying to and from the tallest buildings in downtown Harrisburg. He wasn't observed again after mid-June. Red, Yellow, and Blue stayed at the ledge longer, practicing prey capture and flying farther and farther, until by the first week of August, they too had left, soaring to new heights and parts unknown.

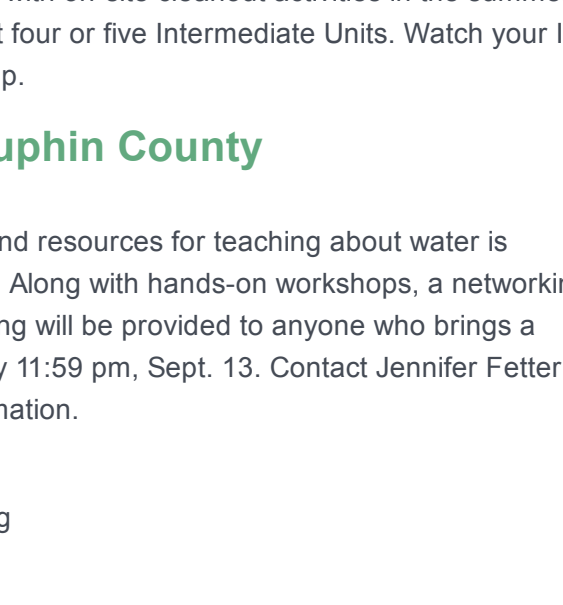
Where will the young falcons choose to set up their nests? It's anyone's guess. Learn where some recent Pennsylvania falcons have gone at [Falcon Wire News](#).

And so ends another successful chapter in the story of the most productive peregrine nest in Pennsylvania. We already can't wait for next year! In the meantime, we continue to observe the resident pair through the FalconCam and learn new things almost every day about these amazing birds.

Water

How to Create a Meaningful Watershed Educational Experience

If you're in one of Pennsylvania's 43 counties in the Chesapeake Bay Watershed and want to take your water education program up another notch, consider creating a Meaningful Watershed Educational Experience (MWEE) for your students. Find out how in the [MWEE educator's guide from the Chesapeake Bay Program](#).



Students will enjoy hands-on learning experiences designed to foster a lifelong relationship with their watershed and a sense of environmental ethics and stewardship essential to the long-term sustainability of the Chesapeake Bay Watershed and all watersheds.



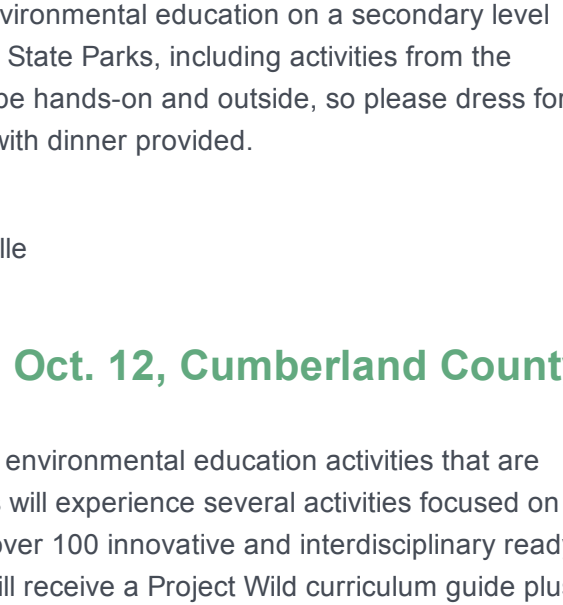
Help Your Community Understand Stream Maintenance Regulations

Our simple [Stream Maintenance Guide](#) provides resources to help municipal officials, property owners, and others affected by flooding of local streams understand the complex regulatory requirements that apply to working in streams. Doing stream maintenance work in a well-planned, environmentally responsible manner greatly reduces the likelihood of future problems. This guide makes it easier.

Calls for Participation

Join the New Environmental Education Providers Inventory

Calling all nature centers, parks, camps, zoos, field stations, and similar organizations that provide environmental education (EE) programs to school, youth group, community, and other audiences—you're invited to add your organization to a new statewide inventory of EE providers being created by the Pennsylvania Association of Environmental Educators as part of the NOAA-funded PA Environmental Literacy and MWEE Programming Capacity Building project.



The new Pennsylvania Environmental Education Providers Inventory will be used to build the capacity of EE in Pennsylvania, including promoting EE, connecting schools with EE providers, and strengthening EE providers networking.

To be included, please email Mandy Nix (mnix@stroudcenter.org) and put "Add my EE organization to the inventory" in the subject line. Amber will follow up to collect your information. Your organization's information will NOT be used for spam or shared for advertising purposes.

Workshops and Training

These upcoming workshops are offered either by DEP or by organizations partnering with us in environmental education initiatives around the state.

School Laboratory Chemicals: Safe Use and Storage Fall Training

[DEP trained 80 teachers and staff from 61 schools](#) last year on the proper use and storage of laboratory chemicals through the School Chemical Cleanout Campaign. Each annual campaign starts in the fall with teacher training sessions and concludes with on-site cleanout activities in the summer. This year training sessions will be offered in October at four or five Intermediate Units. Watch your IU announcements for locations, dates, and how to sign up.

Dive Deeper Summit, Sept. 20, Dauphin County

Anyone interested in innovations in educational tools and resources for teaching about water is invited to attend this Penn State Extension conference. Along with hands-on workshops, a networking lunch, and informative guest speakers, free water testing will be provided to anyone who brings a sample of their home drinking water. Please register by 11:59 pm, Sept. 13. Contact Jennifer Fetter at 717-921-8803 or 4HWater@psu.edu for more information.

- 8:15 am - 3:30 pm
- Central and Conference Center, Harrisburg
- [Register](#)

Project WET Educator Workshop, Sept. 29, Beaver County

Are you looking for fun new ways to engage your students in science and the natural world? Check out this great hands-on workshop to learn about the importance and science of water. Expect to have fun, get moving, and get outside for this workshop! Cost: \$30 (participants earn 6.5 Act 48 hours).

- 8:30 am - 3:30 pm
- Raccoon Creek State Park, Hookstown
- [Register](#)

Green Schools Sustainability Workshop, Oct. 3, Northampton County

Teachers, administrators, and facilities personnel are invited to a free workshop from the Lehigh Valley Community of Green Building United. You'll learn about opportunities available to green your school and address perceived barriers to implementation of green initiatives in schools around the Lehigh Valley and Pennsylvania. Continental breakfast and lunch included. Certified teachers may earn Act 48 hours.

- 9:00 am - 3:30 pm
- Jacobsburg Environmental Education Center, Nazareth
- [Register](#)

From Stream to Sky Workshop, Oct. 3, Lancaster County

This workshop will provide lessons and activities for environmental education on a secondary level from Stroud Water Research Center and Pennsylvania State Parks, including activities from the Project WILD and Project WET curricula. Activities will be hands-on and outside, so please dress for the weather and wear good walking shoes. Cost: \$25 with dinner provided.

- 4:30 pm - 7:30 pm
- Watershed Education Training Institute, Millersville
- [Register](#)

Project WILD Educator Workshop, Oct. 12, Cumberland County

Project WILD provides wildlife-based conservation and environmental education activities that are hands-on, easy to use, and fun. Workshop participants will experience several activities focused on Pennsylvania-specific wildlife and habitat and receive over 100 innovative and interdisciplinary ready-to-use classroom and outdoor activities. Participants will receive a Project Wild curriculum guide plus additional teaching material. Cost: \$15 (participants earn six Act 48 hours).

- 8:30 am - 3:00 pm
- Kings Gap Environmental Education Center, Carlisle
- Register: Contact Michele Nardone at michnardon@pa.gov

Advanced Watershed Educator Workshop, Oct. 16-17, Chester County

Stakeholders across Pennsylvania are working to enable students to graduate with the knowledge and skills to protect and restore their local watershed through participation in Meaningful Watershed Educational Experiences (MWEEs). These experiences provide investigations into local environmental issues that lead to informed action and civic engagement. They require facilitation and support by both formal K-12 teachers and nonformal, field-based educators. This advanced workshop helps prepare nonformal environmental educators to partner with K-12 teachers on MWEEs. Participants will gain a deep understanding of the MWEE as a vehicle for advancing environmental literacy and stewardship while increasing standards-based student achievement. Cost: Free; includes lunch and snacks. Act 48 hours will be provided by DCNR-PA State Parks.

- 9:00 am - 3:00 pm each day. You may choose to attend only the first day (workshop) or both days (workshop and water education skills training)
- Stroud Water Research Center, Avondale
- [Register](#)

Project Learning Tree Teacher Workshop, Oct. 20, Westmoreland County

Project Learning Tree is a national curriculum to help educators teach the importance of forests to our economy and our environment. From biological life cycles to the carbon cycle, and from the lumber industry to recreation, Project Learning Tree's STEM activities bring to light the importance of forests as renewable resources for fuel and products, as habitat, and as a source for increasing the quality of life. Cost: \$10 (Formal educators receive 6 Act 48 hours).

- 8:30 am - 3:00 pm
- Keystone State Park, Derry
- Please contact Jean H. Keene at 724-668-2939 or jkeene@pa.gov for more information or to register for this workshop

Staff News

New Environmental Education Program Coordinator Joins the Center

After 12 years at the Environmental Education Center, Ann Devine has moved on to a new position in Water Resource Training. If you're among the many educators who've worked with Ann over the years, you know we'll miss her dedication and professionalism. We wish her the very best in her new position.

We're delighted to announce that Lisa Meadows, previously an Environmental Education Specialist at the Department of Conservation and Natural Resources (DCNR), has joined us as the new Regional Program Coordinator.

Lisa sends this message:

Greetings, educators! I'm so happy to be joining the DEP Environmental Education Center as Regional Program Coordinator. I look forward to providing support for grant applicants and recipients, designing new educational products, collaborating with other agencies and organizations, and helping to serve Pennsylvania's great environmental education community in myriad other ways.

My three loves are clean water, public lands, and wildlife. As an environmental education specialist with DCNR at Yellow Creek and Raccoon Creek State Parks, I educated school groups, the public, and private groups on the importance of clean water and wildlife for the last five years. Nothing made me smile more than leading a group of kids out to watch the spring duck migration on the lake.

Prior to DCNR, I worked aboard RiverQuest, one of the first green boats in the world. There was never a bad day on the river as an educator. Kids performed science experiments on water chemistry, macroinvertebrates, and plankton to determine the health of our rivers.

My husband and I enjoy biking, kayaking, and hiking with our dogs. We look forward to exploring the small towns and mountains of central Pennsylvania with our 100-pound pup, Honey, and her little bulldog brother, Samson.

Pennsylvania Department of Environmental Protection, 400 Market Street Harrisburg, PA 17101

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