

# Riffles & Pools

Office of Water Quality

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## Greetings Riverwatchers!

Happy spring! April was Participatory Science Month. IDEM, the EPA and organizations around the globe recognized the achievements of the public in furthering our understanding in the field of science. Often referred to as citizen science, data collected by the public can be used to make evidence-backed environmental decisions with nationwide reach.

On a federal level, the EPA supports participatory science (PS) by developing projects, offering grants for funding, and empowering individuals to become involved in their communities. For more information on the EPA's involvement in PS projects, visit [epa.gov/participatory-science](http://epa.gov/participatory-science).

Participatory science is also promoted at the local level. In 2016, the *City Nature Challenge* began as a friendly competition between San Francisco and Los Angeles. The bioblitz-style event involves documenting observations of nature, often with the use of apps like iNaturalist. In the first year, around 1,000 participants recorded 20,000 observations. Since then, the event has grown to involve cities around the globe. In 2023, over 66,000 participants recorded over 1.8 million observations! For more information on the CNC, visit [citynaturechallenge.org](http://citynaturechallenge.org).

Of course, Hoosier Riverwatch has deep roots in participatory science. For over 25 years, our volunteers have been engaging in water monitoring and filling in the data gaps. We are proud of this achievement and thank our network of participatory scientists!

Dylan Allison  
Hoosier Riverwatch Coordinator

Photo Courtesy of IDEM

### Spring 2024

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#### Upcoming Workshops

- May 18 – Bristol
- May 19 – Fremont
- May 22 & 23 – Brownsburg
- June 7 – Greenwood
- June 8 - Bloomington
- June 9 – Auburn
- July 17 – North Webster
- July 24 – Michigan City (Instructor Training)
- August 30 – Bristol
- October 2 – Brazil
- More Coming Soon!

Hoosier  
Riverwatch is  
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## 2024 Instructor Gathering

It's not often that Hoosier Riverwatch instructors from across the state find themselves in the same room with one another. These individuals come from a variety of places like local parks or county Soil & Water Conservation Districts (SWCDs). Most of the time, our volunteer instructors are busy in their own communities, leading educational programs, promoting environmental awareness and managing our natural resources. However, we were lucky enough to gather this spring for a day of recognition and fun.



In April, many of our workshop facilitators traveled to Indianapolis where we met at the Indiana State Museum. Two presentations were offered at the museum. First, Kelly Brown, of the White River Alliance, spoke on the efforts of their RAFT program. The River Assessment Field Teams utilize volunteer water monitors to fill in the gaps in data within the White River watershed. The program is similar to Hoosier Riverwatch with some key differences. For example, RAFT volunteers do not sample for macroinvertebrates but do measure conductivity. RAFT monitors sometimes use electronic meters and send samples for lab analysis; Hoosier Riverwatch does neither. Both programs display their data to the public. Learn more about the RAFT program [here](#).

The second presentation was made possible through interagency collaboration. DNR naturalist Jared Everett, of Hardy Lake, brought a variety of feathered friends to show off. Hardy Lake is one of three DNR properties with a raptor center. The Dwight Chamberlain Raptor Center is home to several permanently injured birds of prey that are used for educational programming throughout the state. "We currently have almost twelve education birds", Everett explained, "with four owls, three hawks, two American Kestrels, a Turkey Vulture and our Bald Eagle." Our instructors got to experience a Barred Owl, Turkey Vulture, and Bald Eagle; each of these species can often be found along the waterways we monitor.



After the morning at the State Museum, we headed over to Frank's Paddlesports Livery on the White River. Instructors enjoyed a lunch on the banks of the White River while individuals were recognized for key accomplishments. Instructors Krista Daniels, Mary Cutler, and Darci Zolman were all recognized for over 20 years of involvement with Hoosier Riverwatch. Ashley Sharkey was praised for conducting the most 2023 workshops with twelve. Jan McGowan received the Fantastic Facilitator Award for mentoring a 7<sup>th</sup> grade student, Ellie Niemier, in her award-winning science fair projects. (Read about Ellie's projects later in this issue!)



The day concluded with a canoe trip down the White River (see cover photo). The 3-mile paddle was accompanied by education by Scott Salmon and Sarah Beckerman of Friends of the White River. FOWR is an organization that advocates to protect, promote, and preserve the river and its watershed. They lead guided paddle trips, host river cleanups and offer guidance to landowners along the river. For more information on FOWR, visit [friendsofwhiteriver.org](http://friendsofwhiteriver.org).

**Thanks to all the instructors who attended the gathering! Hoosier Riverwatch would not be possible without the hard work of these individuals. We look forward to the 2025 Instructor Gathering!**

## Ellie's Story

Typically, Hoosier Riverwatch workshops are reserved for adult participants. Occasionally, however, exceptions are made when a young person shows great enthusiasm for learning. This was the case for Ellie Niemier, a 7th grader from Schmucker Middle School in Mishawaka. Ellie accompanied her mother, Amy, to a 2022 workshop hosted by Jan McGowan with St. Joseph Co. Parks.



The experience sparked Ellie's interest in STEM and inspired further exploration through experimentation. Utilizing a loaner equipment kit offered to trained volunteers, Ellie designed a study that became her 6<sup>th</sup> grade science fair project. The project examined the impact of habitat on water quality and was recognized both regionally and nationally. Ellie was named the 2022 STEM Champion at the National STEM Challenge. Ellie's curiosity didn't stop there. She doubled down and designed another experiment the following school year. Her 7<sup>th</sup> grade project examined the effect runoff of different substances, *i.e.*, leaf litter, ice melt, etc., had on the water quality. Ellie followed the scientific process carefully, implementing control groups and providing hypotheses.



Again, she was recognized for her experimental excellence. Both the sixth and 7<sup>th</sup> grade projects won awards regionally and at the Hoosier Science and Engineering Fair (state science fair). Other awards Ellie has added to her collection include the Water Crusader Award, Student Award of Geoscience Excellence, and the IUSB Junior Researcher Award in Life Sciences. Read below for an interview with Ellie regarding her projects and future plans.

### ***What inspired you to design these projects focused on water quality?***

**Ellie:** I attended a Hoosier Riverwatch training course with my mother and learned that I very much enjoy hands-on research about water quality. I especially loved being in the stream and collecting macroinvertebrates! After learning the importance of water quality, I wanted to do research to better understand how habitat and landscaping runoff can impact our local waterways.

### ***Hoosier Riverwatch uses lots of STEM-aligned methods. Is it safe to say that your favorite subject in school is science?***

**Ellie:** Science is one of my favorite subjects. Specifically, I enjoy learning about physical, chemical and life science.

### ***What advice would you give to your peers who may be interested in becoming involved in STEM or the field of environmental science?***

**Ellie:** Go for it! There are many important topics related to environmental science that students can learn more about and even research if they are interested. Look for opportunities for hands-on STEM activities as this makes science fun! Also, talk with local experts about topics you are interested in. My research shows that when you know better, you do better for caring for the environment. Even young people can have an impact to help protect our environment.

### ***Do you plan to pursue a career in STEM? What is your dream job?***

**Ellie:** Yes! Attending the Hoosier Riverwatch training sparked my interest in STEM and my dream jobs involve science. I hope to become a physician, surgeon or medical researcher.



## Earth Day Education

April is a busy month for IDEM employees. To celebrate Earth Day, IDEM offers educational programs to schools across the state. This year, over 600 schools requested programming. Agency employees filled every request, engaging with students on topics ranging from recycling to pollution prevention. Hoosier Riverwatch Coordinator, Dylan Allison, was one of IDEM's representatives for a presentation on water quality. He visited The Nature School of Indiana in Indianapolis, to present to four classes of second through 6th graders; a total of 120 students!



The interactive lesson plan, called *The Incredible Journey*, detailed the importance of water and illustrated the water cycle in a unique way. Each student represented a water molecule moving through nine stations of the hydrologic cycle, *i.e.*, clouds, groundwater, ocean, etc. Students received a different colored bead at each station for their bracelet. When complete, students discussed their path and compared bracelets. To their excitement, each student had a unique pattern of beads; no water molecule had taken the exact same path. Students kept their bracelets as a reminder of the importance of water.

## Career Chat

Hoosier Riverwatch Coordinator, Dylan Allison, was back in the classroom this spring to conduct a “career chat” with juniors and seniors at Franklin Central High School in Indianapolis. The career chat program allows students to hear directly from experts in the workforce as they plan their post-secondary education path. “It can be overwhelming at that age to plan a career path,” Dylan explained, “but I was able to share my insight and experience. I hope many talented high school graduates will pursue the environmental field.” Thanks to Franklin Central High School for the opportunity to chat about careers!



### Protect Species Podcast

Hoosier Riverwatch instructor, Dr. Luke Jacobus, provided commentary as a guest on the new *Protect Species Podcast*. The podcast invites listeners to explore conservation from the perspective of the people doing the (conservation) work. The podcast is published by the Global Center for Species Survival, a partnership between the Indianapolis Zoo and the International Union for Conservation of Nature (IUCN). Most episodes highlight the well-known endangered megafauna, such as polar bears and elephants. Dr. Jacobus shares a unique story on a lesser-known species- mayflies! Jacobus, a biology professor at Indiana University Columbus, is one of the nation's leading experts on these insects. He speaks about his background as well as the importance of wetlands. The 45-minute episode has the following description:

*Discover the ephemeral beauty of mayflies and the pressing need to conserve our precious wetlands with Dr. Luke Jacobus, whose boundless enthusiasm for Ephemeroptera and Indiana's wetland ecosystems shines brightly in our latest conversation. As we wander through his journey from a curious child enthralled by the natural world to a professor and researcher safeguarding the state's environmental heritage, you'll be captivated by tales from the field and the dedication required to study these fleeting creatures. Dr. Jacobus's experiences underscore the importance of understanding and protecting the diverse life that dwells within our own backyards, emphasizing the interconnectedness of all species, no matter how minute.*

Listen to the Protect Species Podcast [here](#).



### Mark Your Calendars

- Saturday, May 18**      **Bristol, Ind.** – Bonneyville Mill County Park, Baldwin Schoolhouse (9 a.m.–4 p.m.)  
Instructors: Krista Daniels and Jenna Wait. Register by May 11 at <https://elkhartcountyparks.org/events/hoosier-riverwatch-workshop-5-18-24/>.
- Sunday, May 19**      **Fremont, Ind.** – Clear Lake Township Land Conservancy (1–7 p.m.)  
Instructor: Dr. Kate Barrett. Register at <https://forms.gle/8PuDcVNuWfYDXFVX7>.
- Wednesday, May 22**      **Brownsburg, Ind.** – Arbutle Acres Park (10 a.m.–4 p.m.)  
Instructor: Sarah Wolf. Register by May 15 at <https://forms.gle/mTUEJKzJddSGYNvz8>.
- Thursday, May 23**      **Brownsburg, Ind.** – Arbutle Acres Park (10 a.m.–4 p.m.)  
Instructor: Sarah Wolf. Register by May 15 at <https://forms.gle/SuPsSz7R9duqsRzo9>.
- Friday, June 7**      **Greenwood, Ind.** – Greenwood Stormwater Nature Center (10 a.m.–4 p.m.)  
Instructor: Dylan Allison. Register by May 31 at <https://forms.gle/VZ2ESKcczHuQ9uiy9>.
- Saturday, June 8**      **Bloomington, Ind.** – Allison Jukebox Community Center (10 a.m.–4 p.m.)  
Instructor: Brandon Olson. Register at <https://forms.gle/nNZWkdgeD5wdisRY8>.
- Sunday, June 9**      **Auburn, Ind.** – Eckhart Park (9 a.m.–4 p.m.)  
Instructor: Jacquelyn Buck. Register at [https://docs.google.com/forms/d/e/1FAIpQLSeblkgsfm8dK6T\\_gS8BU1JH4s5Y6Ha0xUGqy4JfbEG66NuOSQ/viewform?usp=pp\\_url](https://docs.google.com/forms/d/e/1FAIpQLSeblkgsfm8dK6T_gS8BU1JH4s5Y6Ha0xUGqy4JfbEG66NuOSQ/viewform?usp=pp_url).
- Wednesday, July 17**      **North Webster, Ind.** – North Webster Community Center (9 a.m.–4 p.m.)  
Instructors: Lyn Crighton and Amanda Heltzel. Register by July 10 at <https://forms.gle/BNWmD7zmRtC68M879>.
- Wednesday, July 24**      **Michigan City, Ind.** – **INSTRUCTOR TRAINING (must have basic workshop training)**  
Krueger Memorial Hall (10:30 a.m.–3:30 p.m.)  
Instructor: Dylan Allison. Register by July 17 at <https://forms.gle/TCzmY4Ej5meZ1WP47>.
- Friday, Aug 30**      **Bristol, Ind.** – Bonneyville Mill County Park, Baldwin Schoolhouse (9 a.m.–4 p.m.)  
Instructors: Krista Daniels and Jenna Wait. Register by Aug. 23 at <https://elkhartcountyparks.org/events/hoosier-riverwatch-workshop-8-30-24/>.
- Wednesday, Oct. 2**      **Brazil, Ind.** – Clay County 4-H Fairgrounds (10 a.m.–4 p.m.)  
Instructor: Dylan Allison. Register at <https://forms.gle/YxyGzyYJcZbpu2kDA>.

**More Workshops Coming Soon!**





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## Welcome New Instructors

Two instructor trainings were held in March, one in Indianapolis and the other in Bloomington. Thanks to our nine new instructors who provide more opportunities for Hoosiers to learn about Indiana waterways!

- Rachel Felling, Zionsville Parks & Recreation
- Polly Sturgeon, Ind. Geological & Water Survey
- Tom Sobat, Ivy Tech Columbus
- Brandon Olson, City of Bloomington
- Ginger Davis, Ind. Geological & Water Survey
- Lucas Porter, Ind. Geological & Water Survey
- Parker Iles, City of Bloomington
- Laura Floyd, Benton County SWCD
- Heidi Reid



## *IDEM Office of Water Quality Mission*

The Office of Water Quality's mission is to monitor, protect and improve Indiana's water quality to ensure its continued use as a drinking water source, habitat for wildlife, recreational resource and economic asset.

The office achieves this by developing rules, guidance, policies, and procedures; assessing surface and groundwater quality; regulating and monitoring drinking water supplies and wastewater facilities; protecting watersheds and wetlands; and providing outreach and assistance to the regulated community and the public while supporting environmentally responsible economic development.

## *Hoosier Riverwatch Mission*

The mission of Hoosier Riverwatch is to involve the citizens of Indiana in becoming active stewards of Indiana's water resources through watershed education, water monitoring, and clean-up activities. Hoosier Riverwatch is a water quality monitoring initiative sponsored by the **Indiana Department of Environmental Management's Office of Water Quality**.