

# Riffles & Pools

Office of Water Quality [www.idem.IN.gov](http://www.idem.IN.gov)



Enthusiastic volunteers and instructors jump for joy after a basic training workshop in northern Indiana. Completing a one-day, basic training workshop is all that is needed to begin monitoring Indiana streams.

## Greetings Riverwatchers!

Wow. From winter to sprinter to spring to summer heat in just a few weeks. Even Indiana is redefining what it means to have inconstant weather. But it was quite amazing to see rapid succession of blooming plants burst forth this year. They did not hesitate to make up for lost time! And neither have our Riverwatchers!

We have seen some great workshops already this spring with more on the docket. Teachers and students have enjoyed hitting the creeks for great learning experiences and our ever-faithful volunteer monitors have been busy entering stream data. You have all kept the HRW staff hopping, which is good. We love it!

We are pleased to announce that the test strip problem a number of us faced last season has been resolved. While we are just a tad behind on receiving all of our CHEMetrics sampling supplies, we are doing our best to fulfill your refill requests in as timely a manner as possible. We appreciate your patience and willingness to share and make accommodations as this season gets into full swing.

With such busy-ness, we are grateful to be able to add an article here from a source other than our office staff. We hope you enjoy the change!

– Carol Newhouse, Hoosier Riverwatch Coordinator

### Summer 2018

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- New Instructors
- Handing Down a Legacy
- Pendleton Branch Success Story
- Photo Highlights
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- 2018 IDEM Interns

### **MARK YOUR CALENDARS!**

#### Upcoming Workshops

June 8 – Fremont  
June 9 – Howe  
June 10 – Hobart  
June 16 – Plymouth  
June 28 – North Webster  
July 25 – Warrick County  
August 7 – Paoli  
August 24 – Elkhart

Hoosier Riverwatch is administered by



## Eight More Join the Riverwatch Instructors' Class of 2018



L to R: Nicole Messacar, Chelsea Cottingham, Cindy Jewell, and Corky Prast

Sending another warm welcome to our second round of newly trained Hoosier Riverwatch instructors!

Those trained on March 12 were Nicole Messacar of the LaPorte County Soil and Water Conservation District (SWCD), Chelsea Cottingham and Cindy Jewell of IDEM, and Corky Prast, recently retired from IDEM.

March 23 trainees included Dr. Reid Morehouse of Terre Haute's Ivy Tech Community College, Shelbie Stephenson and Jessica Hoehn of the Washington County SWCD, and Andrew Smith of the Warrick County SWCD.

Check out the location of all 39 HRW instructors on our [online map](#) to find the one nearest you (look for "[active instructors](#) [PDF]" toward the bottom of the webpage).



L to R: Reid Morehouse, Shelbie Stephenson, Jessica Hoehn, and Andrew Smith

**The combined experience of Hoosier Riverwatch instructors active in 2018 equals at least 240 years, not including the years of relevant experience brought to the program by their own professional and other volunteer activities.**

## Handing Down a Legacy

All photos and italicized text in this article are the property of Douglas J. Nemeth and are used with his permission.

Where does our love of nature, woods, wildlife, or water come from? How does curiosity begin? How does it grow into a livelihood or a passion, an appreciation that lasts a lifetime? Some say nature, others nurture.

Perhaps it is linked to our DNA, as deep as our most basic needs to breathe, eat and drink, seek shelter, and procreate. Or perhaps it is taught to us by someone who raised us or by a surrounding culture that instilled in us a respect for nature and environmental consciousness in our youth.

More likely it is a combination of these that moves us and others forward into the lives we choose and the things we ultimately cherish. This combination is what we must also employ to pass this gift, and this mandate, forward into the hands of those that follow, whether to children we bear, those we teach, or any other successor.

*Continued*



Doug Nemeth, cobia fishing off the coast of Florida



## Handing Down a Legacy (cont.)



Doug Nemeth doing typical field work with Idaho Fish and Game



Jacob and Zach Nemeth, honing skills as budding aquatic biologists in Idaho

And while this is a newsletter for citizens and volunteers interested in stream water quality in Indiana, the Hoosier Riverwatch program acknowledges that we are just as connected to programs and waterbodies in other states as our water and natural environments are. And it is not unusual to get feedback and inspiration by what our professional and citizen science colleagues are experiencing elsewhere.

To that end, I received permission from the author to share with you this piece, which moved me to understand a bit more about this 'passing on the torch' of stewardship for our natural world.

Doug Nemeth hails from South Bend, Indiana. Following schooling at Oregon, Indiana, and Maryland universities, Doug held state fish and wildlife jobs in Indiana, Oregon, Idaho, and Florida. He has also held federal jobs with the U.S. Navy Region Southeast, as well as the U.S. Fish and Wildlife Service (USFWS) in California and, currently, with USFWS back in Idaho. Doug and his wife Linda have two sons, Jacob and Zach. Doug has a number of fishery research publications. He is also an avid angler and hunter and has several acting credits to his name.

*I drove to the fringe of heaven today. Drove to where my son told me to go. I was to go there to catch a fish. A west-slope cutthroat trout. And at some point meet him, my son. He was working a screw trap for Idaho Fish and Game in the vicinity. And had invited me to come fishing with him.*

*I drove to the fringe of heaven, where my son told me to go, to catch a fish. That's likely to be the most unexpected and pleasant sentence I ever wrote. It's also the most unlikely I ever expected. Although I might have hoped.*

*I drove into the Selway-Bitterroot Mountains to a place Zach prescribed so I could catch a fish.*

*I arrived early, Z wasn't there, I threw the proverbial kitchen sink at them on my spinning rod and I had one bite, one flash, and 45 minutes of bupkis.*

*Z arrived in his Fish and Game truck. He wore only a shirt with a layer. I wore thermal pants, neoprene waders and 3 layers topped with an Orvis rain jacket, cap and hood. The clouds drizzled upon us.*

*Continued*



Now that, indeed, is a nice view of a watershed

## Handing Down a Legacy (cont.)

*"You should put a rain coat on Z."*

*"I'm fine. I've got two layers." Aka he's "The Man from the Lochsa River."*

*I still had the spinning rod. Z had a fly rod with a gaudy "Micky-finn" fly. The antithesis of everything that I expected could catch a fish. Three casts and he had a fish. Six more casts and he had another fish. A beautiful west-slope cutt.*

*I put the spinning rod away and brought out the fly rod. Z gave me three Mickey-finns—three Mickey-finns that he tied himself, last night, for me in his Fish and Game trailer.*

*I tied one on, second cast...hooked. Six more casts after that, hooked again. And then again.*

*Eventually mayflies filled the air as the stream roiled on...*



Zach Nemeth, tying flies by the Lochsa River in Idaho

*I drove to the fringe of heaven today. Drove to where my son told me to go...*

*My son told me where to fish and how to do it. We did this together. It was quiet. We were quiet. He tied my fly because I don't see too well now.*

*We experienced the quiet, but the change was deafening.*

*I drove to the fringe of heaven today. Drove to where my son told me to go...*

Doug Nemeth  
4/15/18



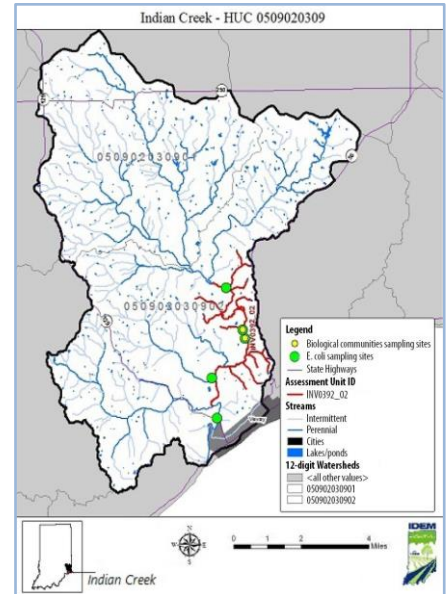
## Watershed Success Story: Pendleton Branch of Indian Creek

Here's a new installment in the [stories of successful watershed efforts](#) collected by IDEM staff and grant recipients over the years:

Indian Creek in Switzerland County is a 22-mile-long tributary to the Ohio River. It flows south through hilly land that is predominantly forested, with some pasture/hay usage and a small amount of acreage in cultivated crops. Livestock here includes goats, chicken, cattle, horses, and donkeys. The use of outhouses is not uncommon.

Midway between upper Indian Creek and its confluence with the Ohio River lies Pendleton Branch. In 2008, IDEM listed Pendleton Branch as being impaired due to elevated *Escherichia coli* levels.

To address this and other concerns, local partners teamed up to develop and implement the Indian Creek Watershed Management Plan (WMP). They did so under the guidance of the Historic Hoosier Hills Resource, Conservation and Development Council. Other partners included the Switzerland County SWCD and the U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) and Farm Service Agency (FSA).



Pendleton Branch is in southeastern Indiana's Indian Creek watershed

Indiana water quality standards for full body recreational use = no more than 125 MPN (or cfu)/100 mL *E. coli*, as a geometric mean of 5 samples equally spaced over a 30-day period. In 2008, Pendleton Branch had 217 MPN/100 mL *E. coli*. In 2011 resamples got geometric mean results of 15 and 47 MPN/100 mL, respectively.

Towards this end, the partners secured:

- \$916,167 in [Section 319 grants](#) from IDEM
- \$26,678 in cost-share funds from local entities in Switzerland County
- \$122,983 in [Clean Water Indiana](#) funds from the Indiana State Department of Agriculture
- \$1,024,071 in [Environmental Quality Incentives Program](#) (EQIP) and Wildlife Habitat Incentives Program (WHIP) funds from NRCS
- \$6,824 in [Conservation Reserve Program](#) (CRP) funds from FSA to design and install best management practices (BMPs)

This WMP led to the implementation of multiple BMPs in the watershed, including improved livestock control, improved water supply, improved plantings and ground cover, and a variety of habitat management to critical areas. It is interesting to note that the collection of biological data on Pendleton Branch by IDEM in 2010 also led to the addition of an aquatic life use impairment in 2014.

Fortunately, the BMP implementation already occurring in the area led not only to Pendleton Branch being delisted for *E. coli* in 2014, but also to improved overall conditions for aquatic life to thrive. Consequently this second impaired listing is proposed for removal in 2018.

IDEM considers a macroinvertebrate index of biotic integrity (mIBI) score  $\geq 36$  supportive of aquatic life use in rivers and streams. In 2010 Pendleton Branch scored only 30 points on the mIBI scale. In 2015 mIBI scores were 40 and 44. Fish IBI scores for Pendleton Branch have consistently tested as supporting of fish ALUS.

## Adult Volunteers at Work and in Training



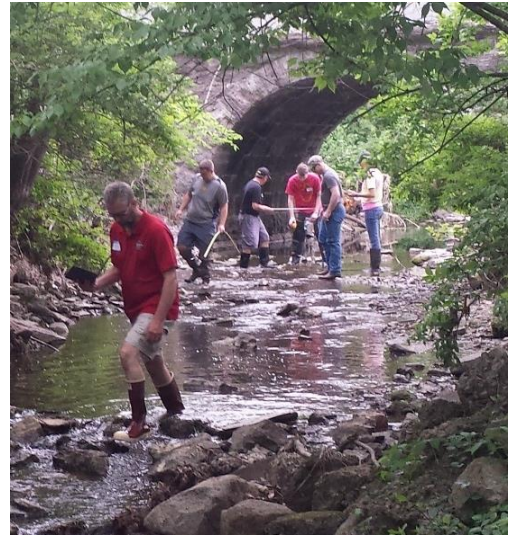
Sierra Club members and HRW volunteer stream monitors Julie Lowe and Dennis Tibbetts conduct regular *E. coli* sampling on East Fork White River in Columbus. (Photo by Rebecca Lorenz)



Kyle Roberts, Vickie Peters, Cheyenne Hoffa (obscured), and Katie Ott learn to use a kick net in Pleasant Creek.



Gaeron Gruber, Brad Wehus-Tow, and Sam Cox learn to use nitrate-nitrite test strips with the help of the HRW coordinator. (So thankful some of my IDEM coworkers maintain fish tanks in the office. The fish waste in the aquarium water gave us enough ammonia to be able to sample nitrates and nitrites in class.)



Mike Weaver (foreground) is the City of Greenwood storm water inspector and an HRW volunteer stream monitor. He hosted our workshop at his location on May 12. In the background, participants collect stream flow measurements in order to calculate stream flow.



Kyle Roberts, Cheyenne Hoffa, Katie Ott, and Vickie Peters pick macroinvertebrates from their kick net.



Sam Cox, Kyle Roberts, Corky Prast, and Carol Newhouse find a variety of mayflies in Sam's D-net samples. Many instars were still quite small. (Lower four photos by Mike Weaver)



## Instructors and Students Have their Field Days



Students and teachers from St. Bartholomew School spent May 8 sampling the water of Fall Fork near Anderson Falls in Bartholomew County.



Participants attend an HRW workshop at the Greenwood Nature Center on May 12.



Students enjoy sampling Fall Fork in Bartholomew County.



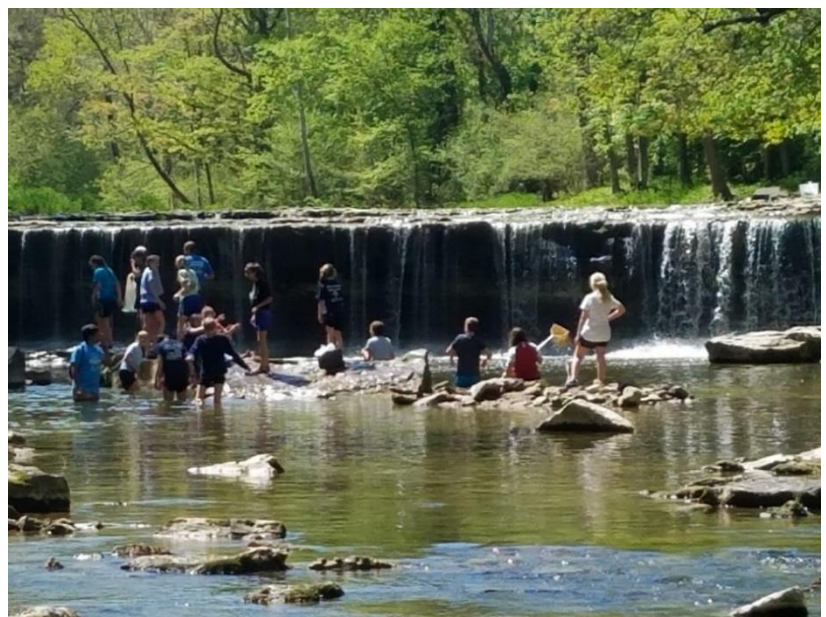
St. Bartholomew students discovered soon-to-hatch salamander larvae adhered to a rock in Fall Fork on May 8.



Instructor Corky Prast explains flow at the Greenwood workshop.



Students from St. Bartholomew School use HRW materials to identify and learn about aquatic macroinvertebrates. (All St. Bartholomew School photos by Julie Lowe)



Mrs. Steele's 8<sup>th</sup> grade class samples Fall Fork below Anderson Falls. The Bartholomew County SWCD provided the use of an HRW loaner kit. Julie Lowe of the Sierra Club's Winding Waters Group assisted with the training.



## Hints for Better Stream Sampling

Here are five pointers for keeping your Hoosier Riverwatch gear and sampling supplies in good working order this season:

- 1 The pH and NO<sub>3</sub>-NO<sub>2</sub> testing strips are hydrophilic (water loving) which means they will draw moisture from the air. To keep a bottle of strips from reacting too quickly and becoming useless to you, be sure to replace the cap each time you remove a sampling strip for water testing. The bottle also has a desiccant pack inside to assist in keeping unused strips from reacting ahead of time.
- 2 When disposing of old, expired test strips, simply place the strips into a trash receptacle. Keep the bottle and the desiccant pack with your supplies. If you ever need to split supplies between sampling crews or student groups that you might be teaching, simply divide your good, unexpired testing strips between the appropriate bottles. This will give you a second set complete with watertight lid, desiccant pack, and the all-important color chart. It is always a good idea to label the bottle top with the correct expiration date for the strips that it contains. You can do so with a piece of tape and a permanent marker over the old expiration date.
- 3 The key to keeping spirit/alcohol-filled thermometers in good working order is to keep the liquid inside from separating. The best way to do this is to keep the thermometer in an upright or angled upright position when not in use in the stream. One way to do this is to wash out and keep a large, tall prescription bottle or similar hard plastic container. You can tape or Velcro this container into the corner of your stream sampling trunk or kit with the opening facing up. Place the thermometer into this container for transport and storage to keep it in an upright position.
- 4 The CHEMetrics kits for DO and PO<sub>4</sub> sampling supplies will fade in the sunlight, so be sure not to leave them open any longer than you need while conducting your stream sampling. These kits will easily dry out on their own after rinsing and storing the cups inside. Thoroughly rinsing the cup and lid in your PO<sub>4</sub> kit will keep them from degrading due to residual activator solution. The lid should only be placed on the cup while mixing the solution during stream sampling. A lid left on the cup otherwise will grow mold inside the cup and all over the activator solution bottle stored inside. Yuck!

**I always wondered why somebody didn't do something about that. Then I realized I was somebody.**

*– Lily Tomlin*

**The first step towards getting somewhere is to decide you are not going to stay where you are.**

*– J.P. Morgan*

- 5 To prevent the spread of exotic or unwanted species or diseases from one sampling site to another, be sure to rinse your supplies and sampling gear thoroughly and well between sites. Allowing gear to dry (in the sun, if possible) will also help. This includes sampling cups, turbidity tubes, bottles, nets, boots, and macroinvertebrate handling tools.

**HAVE FUN EVERYONE, AND STAY SAFE OUT THERE!**



## Mark Your Calendars

### 2018 Basic Training Workshop Schedule

A Hoosier Riverwatch Basic Training workshop will introduce you to hands-on water quality monitoring methods. You will learn about aquatic habitat and practice chemical and biological assessment techniques. Each workshop is held both indoors and outdoors unless weather or water conditions permit otherwise. All interested persons age 18 and over are welcome to attend. Once trained, certified educators are qualified to teach these methods and topics to their students.

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|---------------------------|--|
| <b>Friday, June 8</b>     | <b>Fremont, IN</b> – Clear Lake Town Hall, 111 Gecowets Dr. (9 AM – 4 PM). Instructor will be Carol Newhouse. Contact Bridget Harrison at 260-316-1397 or <a href="mailto:bridget.harrison@clearlakeconservancy.org">bridget.harrison@clearlakeconservancy.org</a> for information or to register.                       |
| <b>Saturday, June 9</b>   | <b>Howe, IN</b> – Old Camp Howe Rec Hall, 6270 N. 270 E. (9 AM – 5 PM). Instructor will be Carol Newhouse. Contact Bobbie Burton at 260-350-0356 or <a href="mailto:brbcoach@gmail.com">brbcoach@gmail.com</a> for information or to register.   |
| <b>Sunday, June 10</b>    | <b>Hobart, IN</b> – Deep River County Park, 9410 Old Lincoln Hwy. (time TBD). Instructor will be Candice Smith. Contact Jim Sweeney of the Izaak Walton League of America, Porter County Chapter at <a href="mailto:jp55biod@att.net">jp55biod@att.net</a> or 219-322-7239 for information or to register.               |
| <b>Saturday, June 16</b>  | <b>Plymouth, IN</b> – Marshall County Soil and Water Conservation District Office, 2903 Gary Dr. (9 AM – 4 PM). Instructor will be Jennifer Krauser. Contact Debbie Palmer at <a href="mailto:Deborah.Palmer@in.nacdn.net">Deborah.Palmer@in.nacdn.net</a> or 574-936-2024 (x3) for information or to register.          |
| <b>Thursday, June 28</b>  | <b>North Webster, IN</b> – North Webster Community Center, 301 N. Main St. (8:30 AM – 4:30 PM). Instructors will be Lyn Crighton and Darci Zolman. Contact Paige at The Watershed Foundation at 574-834-3242 or <a href="mailto:admin@watershedfoundation.org">admin@watershedfoundation.org</a> to register.            |
| <b>Wednesday, July 25</b> | <b>Warrick County</b> – Location and time to be determined. Contact Carrie Parmenter, Posey Co. SWCD at <a href="mailto:carrie.parmenter@in.nacdn.net">carrie.parmenter@in.nacdn.net</a> or 812- 838-4191 (x3) for information or to register.   |
| <b>Tuesday, Aug. 7</b>    | <b>Paoli, IN</b> – Orange County SWCD Office, 573 SE Main St. (9 AM – 2 PM). Contact Michael Wilhite at 812-203-3033 or <a href="mailto:orangeswcd@gmail.com">orangeswcd@gmail.com</a> for more information or to register. You may also register online at <a href="http://www.OrangeSWCD.org">www.OrangeSWCD.org</a> . |
| <b>Friday, Aug. 24</b>    | <b>Elkhart, IN</b> – Elkhart Environmental Center (EEC), 1717 E. Lusher Ave. (9 AM – 4 PM). Instructor(s) will be Krista Daniels and/or Jordan Beehler. Contact EEC staff at 574-293-5070 or <a href="mailto:eecmail@coei.org">eecmail@coei.org</a> for information or to register.                                      |
| <b>Saturday, Sept. 8</b>  | <b>Frankfort, IN</b> – Camp George C. Cullom Nature Center, 6815 W. Co. Rd. 200 N. (8:30 AM – 4 PM). Contact Leah Harden at 765-659-1223 (x3) or <a href="mailto:leah.harden@in.nacdn.net">leah.harden@in.nacdn.net</a> for more information or to register.   |

When you put your hand in a flowing stream, you touch the last that has gone before and the first of what is still to come.

– Leonardo da Vinci



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**No single rain drop believes that it is  
responsible for the flood.**

**– Anonymous**

### ***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 ground water 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 cleanup activities. [Hoosier Riverwatch](#) is a water quality monitoring initiative sponsored by the Indiana Department of Environmental Management's *Office of Water Quality*.



2018 interns who will be working with IDEM's Office of Water Quality Watershed Assessment and Planning Branch sampling teams are (L to R): Cole Baird, Taylor Mikulyuk, Samira Armijos, Julia Markovitz, and Kathy Roeder.