

Riffles & Pools

Office of Water Quality www.idem.IN.gov



McCormick's Creek, Owen County – Photo by Cathy Meyer

Spring 2018

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MARK YOUR CALENDARS!

Upcoming Workshops

- April 28 – Indianapolis
- April 28 & May 5 – South Bend
- May 11 – Bristol
- May 16 – Warsaw
- June 9 – LaGrange County
- June 28 – North Webster
- July 25 – Warrick County

Hoosier Riverwatch is administered by



Greetings Riverwatchers!

I hope your spirits are buoyed as we see days lengthen and hold out the promise of spring. The ice has melted, and my wish for you all now is to not wash away in flood waters! Remember safety first. Wadeable streams are key for any Riverwatch volunteer monitoring efforts.

Staff here at IDEM's Watershed Assessment and Planning Branch are gearing up for the 2018 sampling season—reconnoitering sites, repairing equipment, and ordering supplies. The same can be said for Hoosier Riverwatch (HRW) staff as we inventory and order supplies that will help volunteers in their stream sampling ventures and instructors lead more training workshops around the state.

We have trained another handful of Riverwatch instructors to help us get the word out, teach you stream sampling techniques, and support you in your monitoring efforts. Read on and meet them on page 6 in this edition.

Those of you with monitoring kits will want to take stock of your sampling supplies, especially those with expiration dates. Use the handy checklist on page 6 to help you with this task. See you in the creeks soon!

– Carol Newhouse, Hoosier Riverwatch Coordinator

Riverwatch Early Birds Brave Chilly Indiana Weather



Indiana's state bird, the cardinal, can't be fooled by winter's icy blast. Its territorial song can be heard as early as January as days begin to lengthen here. Listen for its song to increase in intensity as spring mating season approaches. The same could be said of stream sampling, which increases as winter rolls into spring.

The 2018 early bird recognition goes out to at least two people.

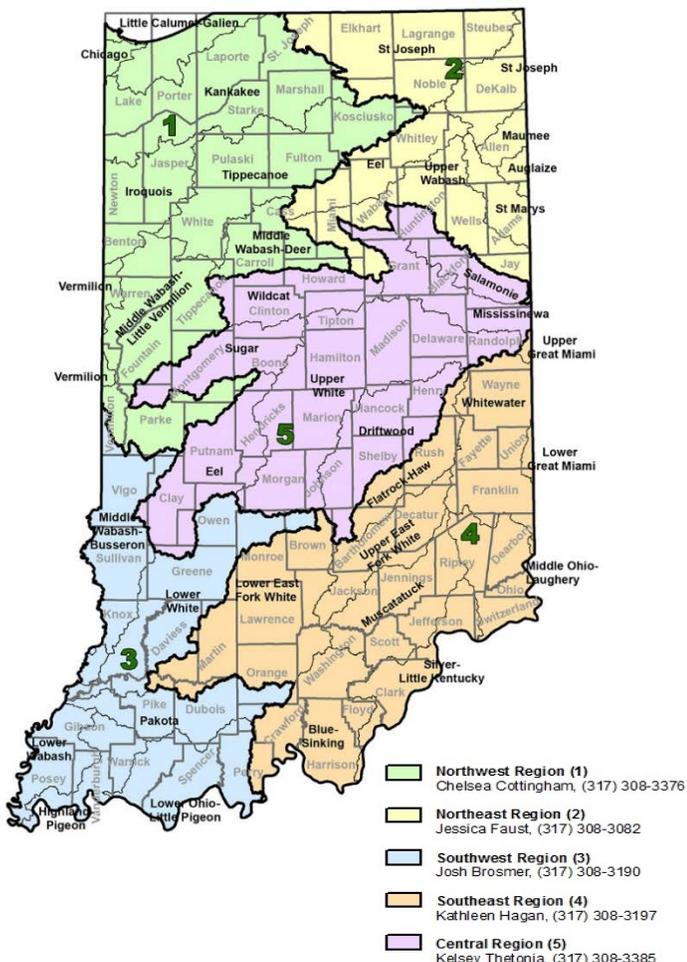
The first early bird shout-out goes to volunteer monitor Dennis Tibbets, who braved this winter's cold to sample the East Fork White River on January 9. Kudos to you, Dennis, for getting your data into the [online database](#) so promptly. Way to go!

Another early bird shout-out goes to Riverwatch instructor Joe Exl of Porter County. Before HRW staffers even wrapped their minds around starting a list of workshops this year, Joe was out teaching one!

That leads us to perhaps our third shout-out to those willing to come out and join a basic Riverwatch workshop so early in the year! Welcome to the Hoosier Riverwatch team!

IDEM gives a hearty congratulations to our Riverwatch early birds.

IDEM Adds Fifth Watershed Specialist to Serve Indiana



IDEM now boasts five watershed specialists to serve citizens and groups around the state.

The staff listed on the [map of IDEM watershed specialist regions](#) are responsible for coordinating, advising, and assisting locally led watershed management activities within their respective watersheds. They work with local, state, and federal entities to integrate watershed planning into local level planning.

Specialists work closely with watershed groups throughout the planning and implementation process. They are here to serve all such groups in the state, regardless of funding source.

The specialist in your area provides [many services](#), including helping you to:

- Improve group organization
- Build successful partnerships
- Run efficient and effective meetings
- Communicate and resolve conflict
- Act as a liaison to other programs or agencies
- Coordinate with other IDEM programs
- Prepare GIS maps

continued

Watershed Specialists (cont.)

Over the years IDEM's watershed specialists, [grant managers](#), and [other staff](#) have worked side-by-side with numerous watershed groups to help improve local water quality. Through innovative partnerships, local groups have successfully used IDEM staff and programs to help clean up rivers and streams, increase education, develop effective water quality improvement plans, and help individual landowners manage their land in ways that benefit Indiana waterways.

Over time, such projects have led to measureable improvements in water quality in Indiana rivers, streams, and lakes. Pigeon Creek is one example of several [successful projects](#) that are making a difference in the quality of water across Indiana. Imagine what success you, too, might enjoy someday if you haven't already!

Pigeon Creek Success Story

Pigeon Creek in Gibson, Posey, Vanderburgh, and Warrick counties flows through agricultural land that once had poor stream buffers and very high soil loss. Monitoring showed that sediments and priority pollutants (even the remnant insecticide chlordane) were of concern in fish tissue and the stream itself. Not only that, but these contaminants entered and mixed with the Ohio River just upstream of where the city of Evansville withdrew its drinking water.

With 32 miles of Pigeon Creek listed as impaired, work began in earnest in 1997. Key partners included Citizens for the Improvement of Pigeon Creek, the Natural Resources Conservation Service (NRCS), and the Vanderburgh County Soil and Water Conservation District. They developed a watershed plan designed to decrease soil erosion and thereby improve water quality. Towards this end, the partners received local, state, and federal funding:

- \$171,990 from IDEM in the form of [Section 319 grants](#) to install best management practices (BMPs) to control soil erosion and provide education, outreach, and technical assistance.
- \$42,997 in matching funds from local landowners and agencies within the watershed to assist with the same.
- \$78,001 from IDEM's [Section 205\(j\) grants](#) to monitor and assess water quality.
- \$270,000 from the Indiana Department of Natural Resources [Lake and River Enhancement Program](#) for planning and additional BMP installation.
- \$135,000 per year for three years from the NRCS Environmental Quality Incentives Program ([EQIP](#)) to help landowners implement conservation practices on their land.

With the assistance and efforts of additional groups from all counties, reductions in soil run-off improved so much that the water and fish stopped showing contamination by chlordane or its breakdown products. Pigeon Creek was removed from Indiana's 303(d) List of Impaired Waters in 2002. Additional project details [are available](#).



Grassed waterways reduce run-off from farm fields and keep soils/amendments in place.



Watering livestock away from creeks keeps waterways cleaner and healthier.



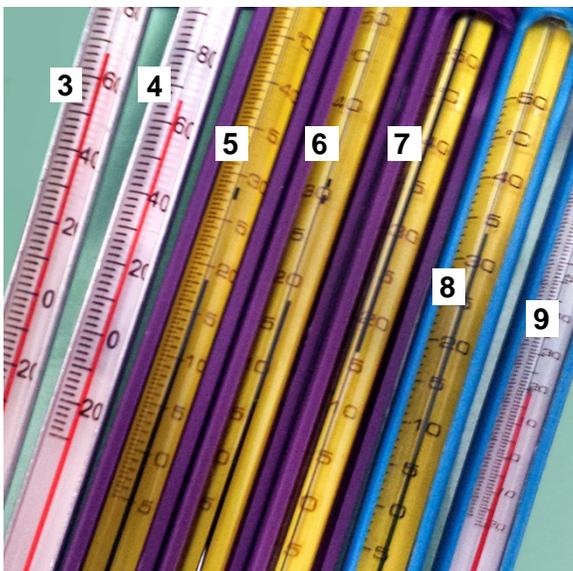
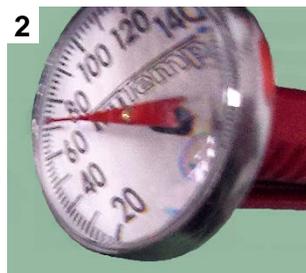
Clean waterways mean healthy fish and happy people.

Temperature Readings and Thermometer Use

Temperature is an important reading when collecting surface water data, especially in understanding chemical and biological conditions. Some of the reasons for this are:

- Colder water holds more dissolved oxygen (DO) which promotes greater diversity of animal life.
- Warmer water promotes photosynthesis, although too much produces DO levels that swing too high during the day and too low at night.
- Plant die-off can lower DO and lead to animal die-offs as bacteria are first in line for available DO.
- Lower water temperatures slow metabolic rates and DO needs of fish and bugs (i.e., lowers their stress).

The Riverwatch training manual ([Chapter 4](#), second paragraph) states volunteers may use any number of acceptable methods to monitor temperature data. Volunteers wanting to calculate a Water Quality Index (WQI) score for their sample site will need to collect a second temperature from the same stream about one mile upstream (i.e., the next county road). A temperature that drops going downstream indicates a source of cold water, such as a spring, entering the stream. A rising temperature indicates some type of thermal pollution, such as lack/loss of shade, run-off from a road or parking lot, or some sort of discharge into the stream.



A thermometer issue noted recently by Riverwatch staff and volunteers is a separation of the liquid inside. According to some online product reviews, this problem is common across many makes of spirit-/alcohol-filled thermometers in use today as compared to past mercury-filled ones.

Four of the nine thermometers pictured to the left are properly working. Riverwatch staff use No. 1—a National Institute of Standards and Technology ([NIST](#)) traceable digital thermometer (set to °C and displaying 19.7°C, or 67.5°F)—to check/calibrate volunteer thermometers. Thermometer No. 2 is for *E. coli* incubators, and it reads several degrees below the 67.5°F reading on the NIST-traceable thermometer.

Thermometer Nos. 3 and 4 match the 67.5°F reading mentioned above. These are useable and need only be converted to °C when put into the database. Thermometer Nos. 5, 6, and 7 are unusable due to separation of liquid. No. 8 is not accurate compared to the traceable unit since it reads close to 34°C.

Thermometer No. 9 reads just under 20°C, which is close to the 19.5°C expected above. Therefore it is accurate, usable, and ready for database entry despite the scale being difficult to determine at tenths of degrees.

Riverwatch staff are studying how to maintain (or return) the integrity of alcohol in the thermometers we use. One website calls for them to be stored at a 15° angle. We will keep you posted on what we learn!

High School Team Receives Governor's Award

The Michigan City High School (MCHS) Wolves Environmental Restoration Team was one of three groups who were recently awarded a 2017 Indiana Governor's Award for Environmental Excellence. During the 2016-17 school year, the team launched an environmental stewardship project at Hansen Park in Michigan City, LaPorte County, Indiana.

The project focused on restoring and monitoring vital riparian habitat along Trail Creek, a designated coldwater salmonid tributary to Lake Michigan. Leaders and cofounders of the team include MCHS biology teacher Stephanie Dege and LaPorte County Soil and Water Conservation District education coordinator Nicole Messacar. In addition, support, training, and funding were provided by teacher volunteers, experts in environmental education, and other pertinent partners.

To accomplish this project, the 27 involved students divided into five work groups, which focused on:

- Removing invasive plant species along Trail Creek and Hansen Pond.
- Establishing diverse native wetland plants in Hansen Pond.
- Planting native bur oak trees.
- Starting a long-term water quality monitoring effort in Trail Creek.
- Conducting a public relations campaign through various online and other media outlets.



Staff and students from the 2016-17 Michigan City High School Wolves Environmental Restoration Team

The students gained much valuable experience through this important hands-on effort, which will also have a positive impact on the community as a whole. The results are a financial savings to the city parks department, benefits to park patrons and visitors, protection of the Trail Creek watershed through reduced erosion, and improved water quality and fish populations.

You can learn more about the Hansen Park Restoration Project when the team presents its project at *A Conference on the Environment* in Michigan City on June 8, 2018 in conjunction with [Lake Michigan Coastal Awareness Month](#) events. Check the [conference website](#) in late spring for details.

Other 2017 [governor's award](#) recipients were Roche Diagnostics of Indianapolis and Purdue University of West Lafayette. Congratulations to all recipients and thank you for a job well done!

New Hoosier Riverwatch Instructors Trained

IDEM sends a hearty welcome to eight new Riverwatch instructors. Pictured (left to right) are Seth Harden, Sarah Wolf, Julie Lowe, Deanna Garner, Derek Cox, Candice Smith, Tyler Trout, and Jordan Beehler.



Snow and circumstances kept a few candidates away, so look for a few more additions soon!

Why All the Numbers and Letters? 3-0-What? CWA Huh?

Do you ever wonder what's up with all the numbers and letters coming out of IDEM? Do your eyes glaze over when you hear or read them? Well, here is a little primer to assist in knowing what some of them mean.

Basically, the numbers and letters refer to state and federal laws or the rules and regulations used to interpret and administer them. If these interest you, see the [Citizens' Guide to IDEM](#) (Part 5, page 66) and IDEM's [environmental laws and rules](#) page for more detail. Many of the duties of IDEM's Office of Water Quality reflect certain sections of the federal [Clean Water Act](#) (CWA) under which a particular program operates or is funded. These sections contain the numbers/letters often read about here (such as the article about watershed specialists on pages 2-3).

For instance, OWQ staff collect and analyze water data to determine how healthy Indiana waters are. IDEM reports these findings in the [305\(b\) assessment report](#) to the public and the U.S. Environmental Protection Agency. U.S. EPA combines the findings of all states and tribes and presents a national report to Congress. Waterbodies which do not meet Indiana's standards for specific uses are placed on the [303\(d\) List of Impaired Waters](#) by OWQ.

Likewise, many of IDEM's [water funds and grants](#) are authorized by various CWA sections such as: Section 319 (nonpoint source program), Section 205(j) (planning efforts), Section 106 and 104(b)(3) (water pollution control programs and projects, respectively), and so forth. OWQ also implements [Section 401](#) (water quality certification) and works with the Army Corps of Engineers on [Section 404](#) (dredge and fill permitting) efforts in Indiana. Hoosier Riverwatch, itself, currently operates under Section 319 funds.

Spring Riverwatch To Do List

- Check quantity and expiration dates of water monitoring supplies.
- Use online [Equipment Refill Request](#) to order perishable supplies.
- Check out a local loaner kit or [apply](#) for your own equipment grant award, if your group is eligible.
- Submit data to the [Hoosier Riverwatch database](#).
- Use the Search and Visualize tools on the database to locate and share data with others.



The HRW online database awaits 2018 data entry, retrieval and use.

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.

- Saturday, April 28** **Indianapolis, IN** – Holliday Park Nature Center, 6363 Spring Mill Road (9:15 AM – 4:30 PM). Contact John Ulmer at hoosierwatersheds@gmail.com or (317) 769-3500 for more information or to register.
- Saturday, April 28 & Saturday, May 2** **South Bend, IN** – St. Patrick’s County Park Brown Barn, 50651 Laurel Rd. (8:30 AM – 12:30 PM). Must attend both sessions to receive certification. Contact Shelley Chaffee at (574) 654-3155 or schaffee@sjcparks.org to register.
- Friday, May 11** **Bristol, IN** – Bonneyville Mill County Park, 53373 County Road 131 (9 AM – 4 PM). Contact Krista Daniels at krista@elkhartcountyparks.org or (574) 875-7422 to register.
- Wednesday, May 16** **Warsaw, IN** – Madison Elementary School, 1436 W. 300 N. (8:30 AM – 4 PM). Intended audience is Science, Technology, Engineering and Mathematics (STEM) teachers, but the public is invited to fill available spaces. Contact Darci Zolman at darci@in.nacdnet.net or (574) 267-7445 (Ext. 5374) to register.
- Saturday, June 9** **Howe, IN** – Location and time to be determined. Instructor will be Carol Newhouse. This workshop is being planned by the LaGrange County Lakes Council. Check [Hoosier Riverwatch Workshops](#) for details later this spring!
- Thursday, June 28** **North Webster, IN** – 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 admin@watershedfoundation.org to register.
- Wednesday, July 25** **Warrick County** – Location and time to be determined. Contact Carrie Parmenter, Posey Co. SWCD at carrie.parmenter@in.nacdnet.net or (812) 838-4191 (Ext. 3) for information or to register.
- Tuesday, Aug. 7** **Paoli, IN** – Orange County SWCD Office, 573 SE Main St. (9 AM – 2 PM). Contact Michael Wilhite at (812) 203-3033 or orangeswcd@gmail.org for more information or to register. You may also register at www.OrangeSWCD.org.
- Friday, Aug. 24** **Elkhart, IN** – Elkhart Environmental Center (EEC), 1717 E. Lusher Ave. (9 AM – 4 PM). Instructor will be Krista Daniels and/or Jordan Beehler. Contact EEC staff at (574) 293-5070 or eecmail@coei.org to register.

Basic training workshops are free, but you must register in advance. Training comes at a cost to the program, as well as to the host and/or instructor. Please be considerate and, once confirmed, contact your instructor if you cannot attend the workshop for which you have registered.

Check [Hoosier Riverwatch Workshops](#) regularly for other additions to this schedule!



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**You don't have to be great to get started. But,
you do have to get started to be great.**

– Les Brown

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](http://www.idem.IN.gov/riverwatch) is a water quality monitoring initiative sponsored by the Indiana Department of Environmental Management's *Office of Water Quality*.

From ice candles (below) to snowdrops sprouting (right), nature reveals many wonders to those who enjoy winter hiking.

Photos by Kriste Lindberg, Monroe County

