

Riffles & Pools

Office of Water Quality www.idem.IN.gov



In all things of nature there is something of the marvelous. - Aristotle

Greetings Riverwatchers!

Hopefully none of you were washed away by spring showers!

Remember that we ask you to monitor *wadeable* streams. You are all far too valuable to risk getting washed downstream! So avoid high, fast, or murky water conditions in your streams when you head out to sample. It takes very few inches of water to knock someone's feet out from under them. And cloudy water can hide hazards such as logs, debris, and other items that can trip, scrape, or otherwise cause injury. Stay safe out there!

A good way to capture changes at your sampling sites is through the use of photographs. The above close-up shows the gentle flow usually found at [Leonard Springs Nature Park](#) in Bloomington. I love the length of the moss hanging from the rocks and the little splashes in the lower left corner that look like dashed fireworks. It's a very peaceful scene.

But even the most peaceful rivulet can become a roaring torrent. The photos at the bottom of page 4 show the waterfall at Leonard Springs during normal conditions, as well as recent high flow conditions. The Hoosier Riverwatch [database](#) is a good place to store photographic evidence of stream conditions.

— Carol Newhouse, Hoosier Riverwatch Coordinator

Summer 2017

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MARK YOUR CALENDARS!

Upcoming Workshops

Saturday, June 3 -
Indianapolis

Wednesday, June 7 -
Evansville

Saturday, June 10 -
Columbus

Friday, June 16 -
Mooresville

Saturday, June 17 -
Bloomington & Brazil

Thursday, June 29 -
North Webster

Hoosier
Riverwatch is
administered by



60 Years of Fixed Station Water Quality Monitoring



Sam Gibson collects a water sample in the early 1960s.

This April marked the 60th year of continuous operation of Indiana's [Fixed Station Water Quality Monitoring Program](#). Fixed station monitoring involves sampling river water quality above and below what are now called "permitted" dischargers in the state. These include wastewater treatment plants and industries that must apply for state discharge permits and comply with regulations and standards.

The Indiana State Department of Health established this program in April 1957, with 49 sites sampled biweekly. Sam Gibson was the first fixed station sample collector. Tim Beckman, one of the current IDEM fixed station sample collectors, was mentored by Sam over 26 years ago. Tim remembers Sam as having a fantastic memory and one of the best analytical minds of anyone he has known when it comes to water quality.

Most of the original 49 sites are still being sampled today. IDEM scientists who manage the program currently sample [165 sites](#) monthly throughout the state. IDEM maintains the data in its Assessment Information Management System (AIMS) database and also uploads it to the U.S. Environmental Protection Agency's [STORET Central Warehouse](#).

IDEM and Engaged Citizens Help Protect Water Resources

On April 25, IDEM Office of Water Quality scientists were on Fall Creek in Indianapolis standardizing the electro-fishing equipment they use to assess fish communities when they encountered volunteers from the Millersville at Fall Creek Valley neighborhood association. The volunteers took photos of the crew and learned firsthand about the work IDEM does to assess the health of Indiana's rivers and streams.



IDEM scientists Anna Colindres, Monika Elion, Stacy Burke, and Kevin Gaston

Between June and October, the scientists will conduct biological community assessments at randomly selected and targeted stream sites. They will collect macroinvertebrate and fish samples, measure water chemistry parameters, and evaluate habitat quality. To collect and hold captured fish, crews use boat or backpack electroshocking equipment in conjunction with nets and buckets. Electroshocking temporarily stuns fish, allowing crews to identify, weigh, and measure them before returning them to the stream. While most fish will be returned to the river or stream unharmed, some will be preserved and returned to IDEM's laboratory for further examination and positive identification with taxonomic keys (counting fin rays, lateral line scales, taking measurements, etc.).

The *Biological Community Assessments: Macroinvertebrates and Fish* fact sheet (available on the IDEM [Fact Sheets](#) page) details the assessment process as well as the laws related to overall ecological health of watersheds. IDEM scientists, Hoosier Riverwatch citizen scientists, and engaged citizens perform the vital role of understanding and protecting our precious water resources and sharing their knowledge with others. Be sure to check out the Millersville neighborhood association's [website](#) for more photos and to read about their Fall Creek Preserve and beautification initiatives.

Mr. Trash Wheel Uses Power of Nature to Pick Up Litter



Photo and data: Waterfront Partnership of Baltimore

The Waterfront Partnership of Baltimore lays claim to a hometown celebrity of sorts. Mr. Trash Wheel resides in Baltimore's Inner Harbor. He is a floating barge with a water wheel and conveyor belt. The river's current provides power to turn the wheel, which moves the conveyor belt. The belt lifts trash and debris from the Jones Falls River and drops it into a dumpster. When there isn't enough water current, a solar panel array provides power to keep Mr. Trash Wheel running. When the dumpster is full, it's towed away by boat and a new dumpster is put in place.

Mr. Trash Wheel has removed up to 38,000 lbs. a day, for a total of over 1.1 million pounds since early May 2014. Although busy collecting trash day and night, Mr. Trash Wheel still finds time to maintain a [live feed](#) and answer questions on Twitter [@MrTrashWheel](#) about eating trash and life in the Inner Harbor!

Volunteers Energize River Cleanups in Indiana

In lieu of Mr. Trash Wheel, Indiana has—and needs more—dedicated volunteers to remove trash and debris from Indiana's rivers and streams. Along the Ohio River from Pittsburgh, PA to Cairo, IL, volunteers will comb the riverbanks and tributaries on Saturday, June 17, during [Ohio River Sweep 2017](#). Volunteers are needed at over 20 locations along rivers and streams in 12 Indiana counties. Please note that three locations in Clark County will conduct the Ohio River Sweep on June 10. Contact the coordinator of the location where you would like to volunteer to confirm the details. Locations may change with short notice due to weather.

Even Indiana state parks need litter removal along rivers and streams! The [Indiana Department of Natural Resources'](#) list of [volunteer projects](#) includes Fall Creek at Fort Harrison State Park, Fourteen-mile Creek and the Ohio River at Charlestown State Park, Clifty Creek and its branches at Clifty Falls State Park, and others. And, if you have time this October and November, consider volunteering for [Living Lands & Waters'](#) Ohio River cleanups at various Indiana locations. IDEM thanks all litter pickup volunteers for their initiative and dedication to making our waterways cleaner and more beautiful for all Hoosiers (and safer for wildlife)!

Water Quality Changes in U.S. Rivers and Streams



A new U.S. Geological Survey (USGS) [interactive map](#) provides a long-term look at changes in the quality of our nation's rivers and streams over the last four decades. For the first time, monitoring data collected by USGS and 73 other organizations at almost 1,400 sites have been combined to provide a national look at changes in the quality of our rivers and streams between the 1972 passage of the Clean Water Act and 2012.

The interactive map can be used to see whether 51 water-quality constituents, like nutrients and pesticides, and 38 aquatic-life metrics, like the types and numbers of fish, macroinvertebrates, and algae, have increased, decreased, or remained the same during the trend periods of 1972-2012, 1982-2012, 1992-2012, and 2002-2012. Tracking changes in the quality of these waterways over multiple decades is crucial for evaluating the effectiveness of pollution control efforts and protecting the nation's water resources into the future.

Protect Freshwater Mussels

This is just a reminder that in Indiana, it is illegal to possess a freshwater mussel, such as the tagged clubshell mussel in the top right photo, whether said mussel is living, dead, or an empty shell.

Although there are exotic invasive mussels that are a nuisance in the state, there are far more endangered ones that need to be protected. Would most of us be able to tell the difference?

To protect remaining endangered mussels and mussel species of special concern, Riverwatch volunteer stream monitors are reminded to leave or return all mussel specimens to the place and in the position where they were found.

Place mussels with their clean side down, because that is where their foot is. Keep the silted or algae-covered side up. That is the side that has been exposed to the sun and is where their feeding apertures are, as shown in the center of the second photo.

Indiana Department of Natural Resources staff members took these photos, which were included in an update about mussels and other wildlife in DNR's [2016 Wildlife Science Report](#).



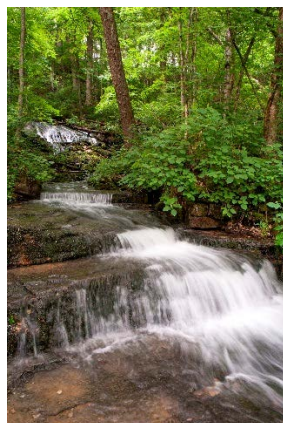
Clubshell mussel



Northern riffleshell mussel with feeding apertures showing

High Flow Conditions on Indiana Waterways

These photos of a waterfall at [Leonard Springs Nature Park](#) in Bloomington were taken in 2013 (left) and 2017 (right). The 2017 photo shows the impact that recent rains had, even on intermittent streams in the state. Note that even the exposed bedrock in the 2013 photo is completely submerged in the 2017 photo.



Waterfall at Leonard Springs Nature Park, 2013



Waterfall at Leonard Springs Nature Park, 2017
Above photo by Kriste Lindberg

Plan Ahead for 2018 River Rally

Several Indiana river and water resource professionals, including Lyn Crighton, Jill Hoffman, Sara Peel, and others, attended the 2017 River Rally in Grand Rapids, Michigan in May. River Network hosts this annual event, which focuses on education, inspiration, and celebration. It brings together agencies, academics, industries, community leaders, nongovernmental organizations, and volunteers from across the nation and around the world in order to connect and inspire each other regarding all things water. Stay informed about River Network's latest news and next year's rally by subscribing to their [mailing list](#).



Upcoming Events

Celebrate rivers and water resources at Indiana festivals! Type "indiana water festivals 2017" in the search field of your web browser to find events around the state, such as:

- June 11 [Nature Play Day](#) at Pogue's Run Art and Nature Park in Indianapolis – an ecological scavenger hunt sponsored by Reconnecting to our Waterways.
- June 17 [Hobart Water Festival](#) – a festival focusing on environmental and storm water activities, including the "Dumpster Drummers," fishing instruction, and exhibits.
- June 24 [Riverpalooza](#) in Fort Wayne – a festival that features dragon boat races, boat rides, food trucks, and entertainment.
- July 8 [Wabash Riverfest](#) in West Lafayette – a celebration of the Wabash River with exhibits, adult and kid activities, a float trip, canoe races, food, and more.
- July 8 [Splash on the Wabash](#) in Huntington – a festival featuring inner tube rides down the Wabash River, a zip line, kayaking, and more.
- July 14 [EnviroFest](#) in Elkhart – a celebration of the environment and sustainability with kid-friendly activities, exhibits, music, and vendors.

Lead Sampling Jobs Available!



The Indiana Geological Survey is seeking 16 experienced water-resource professionals to conduct water sampling at Indiana schools. The goal is to test for lead pipe contamination in school drinking water systems. Most work days will be full 8-hour days, and much of the work will begin in pre-dawn hours prior to the start of school.

Applicants are particularly needed for populated areas in the northern and southern parts of the state (e.g., Gary, South Bend, Fort Wayne, West Lafayette, and Evansville).

The Indiana Finance Authority administers the [Lead Sampling Program for Public Schools](#) with technical assistance from Indiana University's Indiana Geological Survey. Applicants can send a cover letter, geographic location, availability, and resume to Sally Letsinger at sletsing@indiana.edu.

Mark Your Calendars

2017 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.

- Sat., June 3** **Indianapolis** – Paramount School of Excellence, 3020 Nowland Ave., (9:00 AM – 4:00 PM). This workshop is for those involved with Reconnecting to Our Waterways, although vacant spots may be open to others, if available. Contact Instructor John Ulmer at hoosierwatersheds@gmail.com or (317) 769-3500 for information or to register. Professional growth points are available for science teachers.
- Wed., June 7** **Posey County** – St. Peter's United Methodist Church Basement Dining Room, 2800 St. Phillips Rd., Evansville (7:30 AM – 3:00 PM CDT). Contact Carrie Parmenter, Posey Co. SWCD at carrie.parmenter@in.nacdn.net or (812) 838-4191 (x3) for information or to register. Come earn continuing education units for certified drinking water and/or wastewater operators and professional growth points for science teachers!
- Sat., June 10** **Columbus** – Mill Race Community Center, 900 Lindsey St. (9:00 AM – 4:00 PM). This workshop is for Sierra Club members, although vacant spots may be open to the public, if available. Contact Instructor John Ulmer at hoosierwatersheds@gmail.com or (317) 769-3500 for information or to register. Professional growth points are available for science teachers.
- Fri., June 16** **Mooresville** – Mooresville Public Library, 220 W. Harrison St. (9:15 AM – 4:45 PM). Instructors will be Carol Newhouse and Julie Speelman. Contact Carla Monical at callen@morgancounty.in.gov or (765) 349-2060 for information or to register. *Registration deadline is June 11 at 4:00 PM.*
- Sat., June 17** **Bloomington** – The Commons at Karst Farm Park, 2450 S. Endwright Rd. (9:00 AM – 4:00 PM). Contact Cathy Meyer at cmeyer@co.monroe.in.us or (812) 349-2800 for information or to register. *Registration deadline is June 9 at 4:00 PM.*
- Sat., June 17** **Brazil** – Izaak Walton League Grounds, 8172 N. County Road 650 W (8:00 AM – 4:00 PM). Instructor will be Karen Henman. Contact Tyler Trout at (812) 446-8986 (x3) or Tyler.Trout@in.nacdn.net for information or to register.
- Thurs., June 29** **North Webster** – North Webster Community Center, 301 N. Main St. (8:30 AM – 4:30 PM). Instructors will be Lyn Crighton and Darci Zolman. Contact Betsy at admin@tippecanoewatershed.org or (574) 834-3242 to register.
- Tues., July 25** **Battle Ground** – Brier Environmental Education Center, Tippecanoe Battlefield, 200 Battleground Ave. (8:30 AM – 4:30 PM). Instructors will be Mary Cutler and Darci Zolman. Contact Mary at mcut@msn.com or (765) 567-2993 for information or to register.
- Early Sept.** *Johnson County SWCD is planning a workshop. Watch [Hoosier Riverwatch Workshops!](#)*
- Sat., Sept. 16** **Indianapolis** – Holliday Park, 6363 Spring Mill Road (9:00 AM – 4:00 PM). Contact John Ulmer at hoosierwatersheds@gmail.com or (317) 769-3500 for information or to register. Professional growth points are available for science teachers.

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](#) often for new additions to the workshop schedule!



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How wonderful it is that nobody need wait a single moment
before starting to improve the world.

— Anne Frank

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.hoosierriverwatch.com) is a water quality monitoring initiative sponsored by the Indiana Department of Environmental Management's *Office of Water Quality*.



Posing with a map of their watershed, participants at the April 29th Hoosier Riverwatch basic training workshop in Shelbyville make the best of learning sampling techniques indoors. Although the morning downpour had ceased, flood conditions in the Big Blue kept everyone safely inside during the fieldwork part of the training.