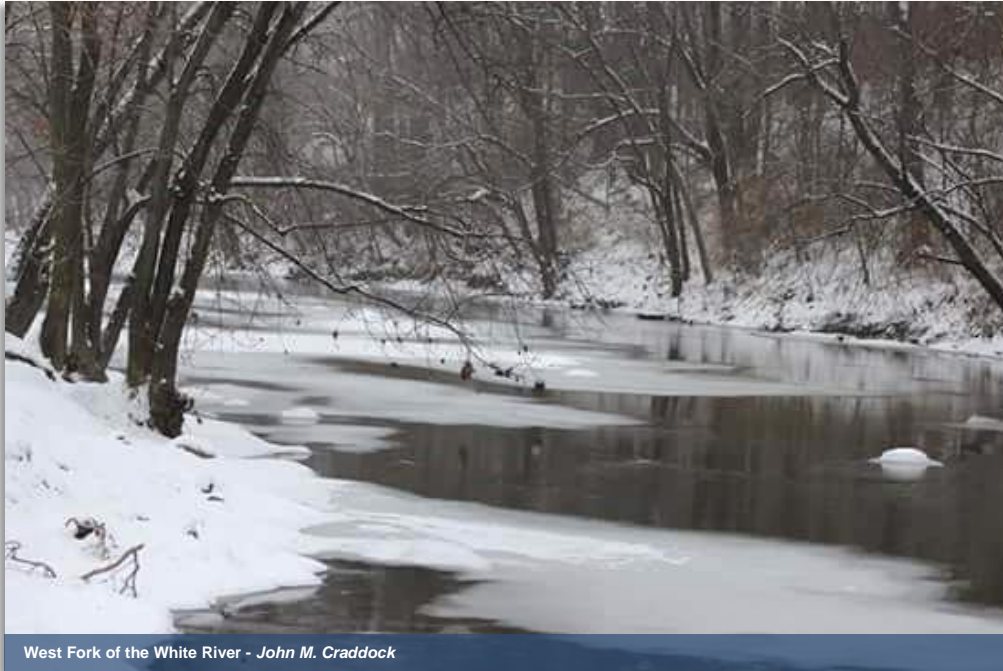


Riffles & Pools

Office of Water Quality www.idem.IN.gov



West Fork of the White River - John M. Craddock

Greetings Riverwatchers!

Winter is flying by. The cardinals, robins and mourning doves outside the office window here at "HRW Central" are pairing up and starting to sing as a reminder that days are getting longer and will soon get warmer.

Time for **YOU**, our dedicated volunteers, to be thinking about starting a new stream monitoring season! *Where* do you want to sample? What *supplies* do you need *refilled* if your organization has its own sampling kit? Have you checked to see if the nearest *loaner kits* are ready to be checked out and used for another year? Do you have your notebook prepared with your *volunteer and site IDs* handy and a fresh set of *datasheets* printed and ready to go? Hope so! If not, let us know!

On our end, it's time for us, your **HRW staff**, to get everything in place to support your monitoring efforts; as well as those of the instructors who are planning another round of wonderful training workshops! Just so you know, *we plan to train another half dozen instructors in spring 2015*. We already have four candidates lined up, but need a couple more to fill in gaps around the state or replace instructors who have retired or moved on.

So, if you or someone you know is interested in leading basic HRW workshops to teach others what you already know and love, let us know. As the list for the 2015 Instructor Training class fills, we will start a list for training another half dozen in 2016.

We look forward to another year of serving you in these efforts! - Carol Newhouse

January / February 2015

In This Issue:

- Profile of a HRW Teacher
- 10-Yr Instructor Anniversaries
- Webinar on External Data Framework
- HRW Stats, 2014 and General

Mark Your Calendars! 2015 Basic Workshops:

Mar. 4 – Sugar Ridge
FWA, Winslow

April 25 – Holliday
Park, Indpls.

May 15 – Bonneyville
Mill Park, Bristol

Sep. 26 – Holliday
Park, Indpls.

Hoosier
Riverwatch is
sponsored by



Class of 2004 HRW Training Instructors



Standing: Norma Duckworth, Becky Howell, John Ulmer*, Leah Harden*, Angie Smith, David McCullough, Cary Molinder, Cathy Meyer* & Bob Ginger

Seated: Elizabeth Trybula, Christine Kirk, Carla Orlandi, Matt Lake & Kriste Lindberg*

** Individuals still leading HRW workshops in Indiana.*

Celebrating the Class of 2004! We Couldn't Do It Without You!!

Ten years ago, at Camp Mack in Indiana, another class of dedicated, multi-talented and hardworking Riverwatch instructors was trained, equipped and turned loose on the world. Such classes—joined with those trained before and since—are key to the success of Riverwatch in Indiana. They are, literally and figuratively, the “backbone” of Hoosier Riverwatch!

The trained instructors and facilitators repeatedly take the HRW message to classrooms full of volunteers, giving them a chance to go out and “get their feet wet.” They teach what watersheds are about, as well as pollution sources, and why these are important to understand. They teach basic skills to everyday people, which enable them to go out and do extraordinary things in their communities.

How cool is that?!!

While some instructors have retired, others moved away and, sadly for us, a few have passed into a world where water quality problems no longer exist; let us all send out a great big KUDOS to ALL of our facilitators and instructors, and *especially* to those who were trained in the HRW program in 2004!

Happy 10 Years, Ladies and Gentlemen!

Thank you for serving so faithfully!

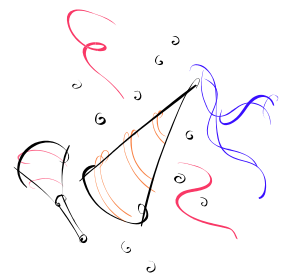
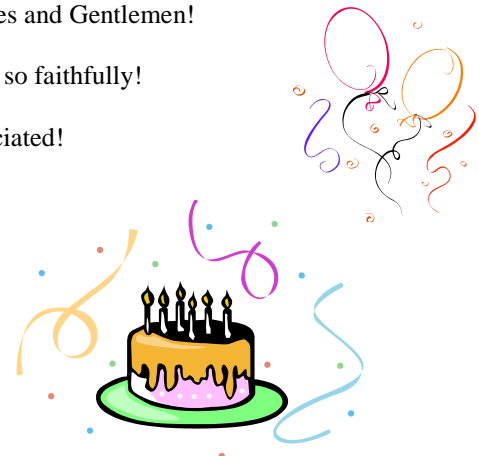
You are greatly appreciated!

Happy Smiles at Graduation 2004



Same persons as above plus HRW staffers/teachers, Jan Sneddon (nee Hosier) and Lyn Crighton (nee Hartman)

Proudly Displaying Their Newly Earned and Much-Coveted HRW Vests and Training Trunks at Graduation 2004



Changing Lives, Influencing People *by Carol Newhouse*

Teachers. We spend years of our lives with them; hours at a time, day in and day out, week after week, at a time in our lives when we are the most malleable. So how can they not influence us? This story is about a woman who was uninspired by an “awful, just awful biology teacher” but who loved science and teaching enough to go on and inspire many more students by giving them positive experiences with biology and with Hoosier Riverwatch.

Dianne Farrell contacted HRW in the fall of 2014. She had retired from teaching and wished to hand over her monitoring equipment for others to use. We met for the exchange and to talk about what HRW had meant to her. This is what I learned.

Raised on a farm in Newton County, Dianne loved being outside. Science came naturally to her and she dreamed of being a landscape horticulturist. She had not planned to be a teacher at all. But, when she signed up to student teach during her junior year at Manchester University (thinking it would at least be a way to earn money for graduate school), she surprised herself by falling in love with teaching.

Dianne taught for a while and then went to graduate school to earn that master's degree in landscape horticulture. Even though she stayed away from the classroom for a few years following her master's, Dianne's passion for “the environment and what we were doing to it” continued to grow.

Eventually, Dianne found herself back in the classroom at Frontier Jr. /Sr. High School in Chalmers, where she felt she could invest more time and energy in helping to make others aware of environmental issues. She says, “My grandmother was a teacher and my sister is a teacher. So, maybe it was in my blood.”

When she started teaching again, Dianne heard about the educational workshops offered at that time by the Department of Natural Resources. She got trained in ProjectWET and in Hoosier Riverwatch, and speaks enthusiastically about the two days she spent in the Wonder of Wetlands (WOW) workshop. These programs influenced her teaching style and topics for the next several years.

Though she mostly taught biology to freshmen, Dianne began to focus her advanced classes on the complexities of environmental issues. “The second time I taught”, she says, “was different, because I had evolved as a teacher. I had a different perspective than when I first got out of college.”

Moots Creek in White County became their sampling site. It was chosen because it adjoined a property belonging to the family of one of Dianne's first students. “It runs past many kids' homes and most of them have been associated with it in one way or another throughout their lives,” she states.

“The first time they went out, they were on cloud nine!” Dianne recalls. “We brought back what we'd collected. The kids were wet and muddy and laughing and loud. We had a new principal at that time and he met us at the door.” (“Uh, oh!” I'm thinking.) She continues, “The kids invited him to see what they had found. He joined us in the classroom and spent time looking through every microscope and talking to each student about what they had learned. He really listened to them!” (Now that's impressive.)

Despite the “red tape” involved with taking kids out on a field trip—i.e., getting permission slips signed, extra lesson plans written for the classes left behind, lunches organized and gear packed—Dianne recalls that going out to Moots Creek “was the *best* classroom” she ever got to teach in, and that those days out with her students are her “*best* memories of teaching.”

Before field days, Dianne spent weeks teaching the kids about watersheds and nonpoint source pollution. Her students learned to do water tests inside using pond water. Then they took sampling trips to Moots Creek twice in the autumn and twice each spring. Usually she had seven to 15 students in tow. One time she had over 20.

“It was *always* cold and rainy on our days in the field,” Dianne recalls. “But even during the absolute worst weather, the students would insist on not missing their day at the creek.”

(continued on page 6)



Dianne Farrell, October 2014



My reward is to see how many kids have gone on to college and studied science. And they come back and say, 'It's because of you!'

Dianne Farrell

Latest Watershed Webinar at Purdue University Website Highlights IDEM's External Data Framework



Jody Arthur, IDEM
Office of Water Quality

The External Data Framework provides a *systematic, transparent, and voluntary* process for external parties to send their water quality data to IDEM's Office of Water Quality.

Many of us know that the federal government requires the states to report on the quality of their environmental resources. But did you know that states are also mandated to consider *all available* data on these resources, at least where water is concerned? That includes data collected by colleges, municipalities, environmental groups and citizen volunteer monitors.

This process was well-covered in a webinar which aired December 10, 2014, on Purdue University's watershed-focused website (see link below). Ms. Jody Arthur (photo left) of the Indiana Department of Environmental Management (IDEM) explained the role and efforts of IDEM's Office of Water Quality to better meet this mandate while making assessments and decisions regarding the quality of water in Indiana's lakes, rivers and streams. This process is known within the agency as the External Data Framework (EDF).

So, what does this effort have to do with Hoosier Riverwatch?

For one thing, the fall 2015 release of the updated Hoosier Riverwatch database will include a portal for data entry from outside parties, in addition to its normal portal for citizen volunteer data. We hope to provide you with the capability of mapping and graphing some of this extra data for your watershed, in addition to that collected as part of Riverwatch. Also, look for information here or in future workshops regarding ways to improve the quality of the already great volunteer data being submitted to the database.

- If you haven't already done so, go to the Purdue website at <https://engineering.purdue.edu/watersheds/>
- Click on the tab labeled Webinars
- Check out the library of archived webinars on important water resource topics
- Watch Ms. Arthur's webinar from December 10, 2014, for more info on the EDF



Milkweed, Delaware County - John M. Craddock

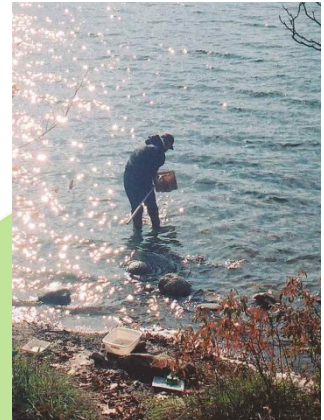


Mongo Mill Pond - Douglas S. Newhouse

Interesting Hoosier Riverwatch Statistics

2014 Programmatic Stats

- 20 = Workshops held in 2014
 - 19 basic
 - 1 advanced *E. Coli*
- 154 = Participants trained in 2014
 - 37% students
 - 26% citizens
 - 21% professionals
 - 16% educators
- 15 = Workshops held in Indiana counties in 2014, with attendees from:
 - 39 Indiana counties
 - 3 other states
 - 1 other country
- \$50.33 = Average costs per participant, as donated by instructors and/or hosts during 2014:
 - \$2.64 in actual costs (refreshments, office expenses)
 - \$47.69 in in-kind donations (donated time, mileage, meeting rooms, etc.)
- 14 = Number of monitoring equipment grant awards given out in 2014
 - 13 still in use
 - 1 returned when interested participant left the organization



General Stats and Trivia Pulled from the Online Database

- 975 = Number of volunteer monitors registered
- 384 = Number of organizations currently entering
- 2,266 = Number of monitoring sites registered
- 9,203 = Number of water monitoring events entered
- 95% = Percentage of the counties in Indiana (87 of 92) with HRW sampling sites
- 5% = Percentage of counties in Indiana (5 of 92) without HRW sampling sites
- 236 = Number of organizations, schools, government groups, and others which have been awarded monitoring kits since 2006
- 207 = Number of private citizen volunteer monitors who are not allied with any organization
- 41% = Percent of water quality data collected and entered by educational groups (jr./sr. high schools, colleges/universities, homeschoolers, elementary schools, etc.)
- 28% = Percent of data generated by civic organizations (official nonprofits, environmental, neighborhood, scouts, camps, churches, 4-H clubs, etc.)
- 23% = Percent of data generated by government entities (SWCDs, parks, cities, counties, districts, etc.)
- 8% = Percent of data generated by all other organizations (watershed projects, businesses, etc.)



Changing Lives, Influencing People *(continued from page 3)*



Dianne Farrell continues, “That first year, the younger students watched the advanced classes prep for the field work, go out for the day, and come back with such enthusiasm. It made the younger students excited to take the advanced class so they, too, could go out to sample Moots Creek.”

Sometimes, with regard to improving the environment, the students would ask: “What difference does it make?” and, “I’m just one person—what can I/we do when there are so many other people doing the opposite?” To which Ms. Farrell would reply, “You are one person and *someone could follow your lead.*” That thought was usually all it took to inspire them.

Dianne says she also enjoyed seeing which macroinvertebrates would turn up at the end of each year's sampling trip. One year it might be loads of tiny mussels. Other times there might be huge dragonfly nymphs which would vanish by the next stream visit.

Most of all, Dianne liked knowing she was a part of something bigger; that she had influenced her students positively in the area of science. She likes that she had made biology “exciting for them to learn” and that she “had a start in the beginning of their career.” That is quite an improvement over the

apparently angry teacher who had once made her own high school biology experience miserable!

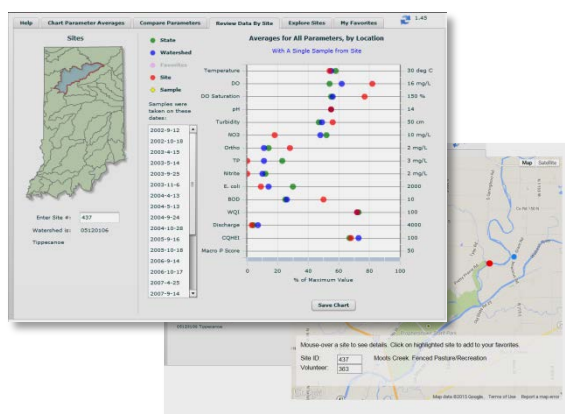
“My reward,” Dianne says, “is to see how many kids have gone on to college and studied science. And they come back and say, ‘It’s because of you!’” With a catch in her voice she continues, “That’s a real pat on the back!”

What’s Dianne doing now in retirement? She’s working at a garden center now and “loves it, absolutely loves it!”

What are her former students doing? One is a senior studying genetics at Purdue. One graduated with a biology degree and does cell/tissue research for a medical supplier. Another became a nurse, while one went into veterinarian research, and yet another into human research.

Hopefully, the rest of them are living their lives as better-informed citizens; making conscientious choices about the resources they use, and teaching their own children to take responsibility for the environment around them. What more could an educator—or a voluntary education program like Hoosier Riverwatch—ask for?

Photo of Dianne by Carol Newhouse.
Photos of former students courtesy of Dianne Farrell.
Insect photo from HRW photo files.



The Frontier Jr. /Sr. High School advanced biology students collected data on Moots Creek in White County from September 12, 2002, until October 22, 2010, under the tutelage of Dianne Farrell. Moots creek lies in the Tippecanoe Watershed. It has been sampled 23 times to-date. The macroinvertebrate, chemistry, flow and habitat data for this and other sites are available for viewing and/or graphing at www.hoosieriverwatch.com/DataWatch.

Enter Site ID #437 to view/graph Moots Creek data. Or, better yet, become a HRW volunteer monitor and pick your own site from which to collect water quality data!

Check These Out:

Hoosier Riverwatch Volunteer Stream Monitoring Training Manual, 13th Edition is available for viewing and downloads online at www.IN.gov/idem/riverwatch/2332.htm.



A Summary of the Benthic-Invertebrate and Fish-Community Data from Streams in the Indianapolis Metropolitan Area, Indiana, 1981-2012

A 29-page Scientific Investigations Report (#2014-5225) by the U.S. Geological Survey. Publication is available at <http://pubs.usgs.gov/sir/2014/5225/> or at <http://dx.doi.org/10.3133/sir20145225>.



Mark Your Calendars:

Feb. 11-13 44th Annual HASTI (Hoosier Association of Science Teachers, Inc.) Conference: The Nature of Science. To be held at the Indiana Convention Center in Indianapolis. For more details check out www.hasti.org.

- | | |
|-----------------|---|
| March 4 | Basic Riverwatch Workshop at Sugar Ridge Fish & Wildlife Area, Winslow, IN. 9 AM – 4:30 PM (EST). Contact facilitator Ann Ice at (812) 385-5033 (x3) or ann.ice@in.nacdnet.net for info or to register. |
| April 25 | Basic Riverwatch Workshop at Holliday Park, Indianapolis, IN. 9 AM – 4 PM. Contact instructor John Ulmer at (317) 769-3500 or remlu@tds.net for info or to register. |
| May 15 | Basic Riverwatch Workshop at the Baldwin Schoolhouse, Bonneyville Mill County Park, Bristol, IN. 9 AM – 4 PM. Register before May 8 with instructor Krista Daniels at (574) 875-7422 or at krista@elkhartcountyparks.org . |
| Sept. 26 | Basic Riverwatch Workshop at Holliday Park, Indianapolis, IN. 9 AM – 4 PM. Contact instructor John Ulmer at (317) 769-3500 or remlu@tds.net for info or to register. |



**Indiana Department of
Environmental Management**
Office of Water Quality
Watershed
Assessment and Planning Branch

100 North Senate Avenue,
MC 65-44-2 Shadeland
Indianapolis, Indiana
46204-2251

PHONE:
(317) 308-3392

E-MAIL:
riverwatch@idem.IN.gov

Program URL:
www.idem.IN.gov/riverwatch/

Database URL:
www.hoosierriverwatch.com



or go to:
www.idem.IN.gov

IDEM OWQ 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.

A special thanks to the many teachers who have been trained in the Hoosier Riverwatch Program over the years and who, tirelessly, teach the same to their students through classroom and field sessions! Forty-one percent of the data in the Riverwatch database is collected by educational organizations, from preschool to university levels. The majority of these are Indiana junior and senior high school students.

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**. For more information, go to www.idem.IN.gov/riverwatch.



West Fork of the White River - John M. Craddock