

Riffles & Pools

Office of Water Quality www.idem.IN.gov



Creek at Karst Farm Park, Monroe County, Indiana during the November 20, 2015 workshop

Greetings Riverwatchers!

It has been a busy winter and we are pleased to announce the completion of upgrades to your favorite online database at www.hoosieriverwatch.com! We will highlight some of the latest and greatest additions to the database in this newsletter. So, read on and enjoy!

Spring is finally here and the wildflowers are blooming. The lengthening days do not lie. Even the birds remind me that warmer, brighter days are ahead for us. Robins are moving back out of the woodlots and finches are singing sweetly. Geese are pairing up and red-winged blackbirds are claiming their territories.

I even found an interesting bit of inspiration printed on the wrapper of a chocolate bar this week. It states, "Get lost on purpose." It reminded me of my T-shirt with the saying, "Not all who wander are lost."

So, think about it. What is worth spending your life, your time, and your efforts on? Your family? Always. Your health? Most definitely. Traveling? If you are fortunate enough and enjoy it, sure. A trip to a local park to enjoy the outdoors with family and friends? Oh, yeah, now you're talking! The care and upkeep of the environment and the natural resources upon which our very lives, health, livelihood and families depend? You bet!

And that's what we are all about here at Hoosier Riverwatch and IDEM—providing you with opportunities to go out and 'get lost on purpose' by wandering Indiana streams, thereby becoming better informed and more actively involved in the stewardship of the water resources on which we all rely.

— Your Hoosier Riverwatch Coordinator, Carol Newhouse

Spring 2016

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MARK YOUR CALENDARS!

Basic Workshops

April 9 – Chesterton

April 19 & 21 – Kokomo

April 23 – Holliday Park, Indianapolis

April 23 & 30 – South Bend

The complete 2016 basic training schedule is available on page 9.

Hoosier Riverwatch is sponsored by



Hoosier Riverwatch 2015 Recap

With **10** new instructors trained last spring, the Hoosier Riverwatch program hit the ground running in 2015.

The season marked the third year that the Watershed Assessment and Planning Branch of IDEM's Office of Water Quality operated Hoosier Riverwatch. The staff continues to be excited about the potential this relationship brings to the program, especially with regard to increased use of citizen science to support watershed efforts.

The **33** workshops conducted during 2015 consisted of:

- 31 basic training workshops held in 22 counties
- 2 advanced *E. coli* workshops held in 2 counties

See blue dots on map (lower right).

Participation in Hoosier Riverwatch training workshops was:

- **282** trained participants representing:
 - 49 Indiana counties
 - 4 other states
 - At least 1 other country

Of the 282 participants this year, **276** self-reported their occupations as:

- Interested Citizens – 71 people
- University (49) or High School (26) Students – 75
- All Educators
 - Junior high or lower grade teachers – 16
 - High school teachers – 14
 - Non-formal educators – 10
 - University instructors – 7
 - School administrators – 2
 - Homeschool educators – 1
- Natural Resource/Environmental Professionals – 45
- Other Persons – 35

See percentages in pie chart (upper right).

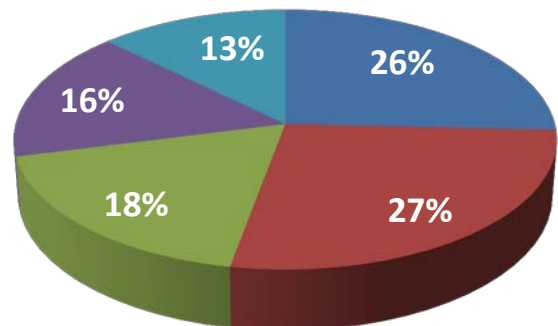
Hoosier Riverwatch equipment grant requests during 2015 received the following activity:

- **16** equipment grant packages were awarded and sent out to qualifying groups
- **67** supply refill requests were processed and sent out by IDEM staff

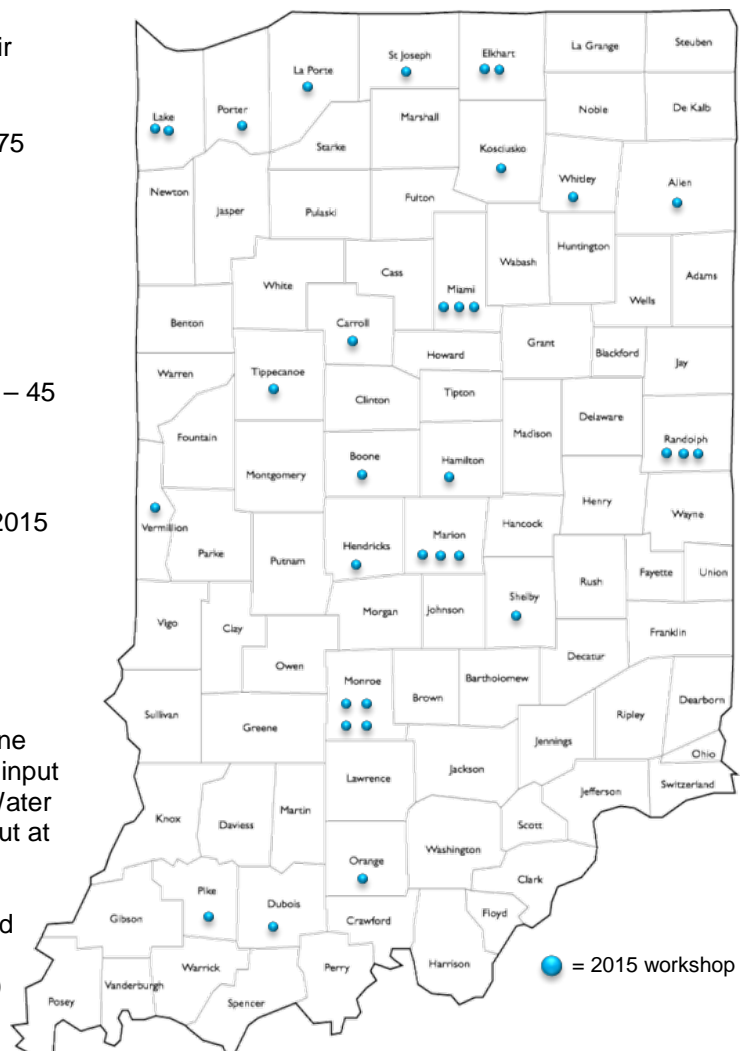
The major undertaking of 2015 was upgrading the online database for Hoosier Riverwatch and accommodating input and processing of data coming into IDEM's Office of Water Quality from a variety of sources. Be sure to check it out at www.hoosieriverwatch.com!

Other efforts this past season included researching and assigning or correcting locational data for more than **500** sampling sites (~25 percent of the online database) to better accommodate data mapping and graphing tools. See page 8 for more details on this effort.

**2015 Hoosier Riverwatch Workshop
Participants by Occupation**



■ Interested Citizens
 ■ University or High School Students
 ■ All Educators
 ■ Natural Resource/Environmental Professionals
 ■ Other Persons



Canoemobile Team Reaches Students and Families



In conjunction with the 7th annual Hoosier Outdoor Experience event held at Fort Harrison State Park during September 2015, Wilderness Inquiry's Canoemobile team out of Minneapolis operated the canoe livery.



A cadre of high school cadets from the Hoosier Youth Challenge Academy in Henry County assisted the seven-member Canoemobile crew with handling, loading and unloading passengers from their six 24-foot-long Voyageur canoes during the two-day event.

The cadets' hard work on Saturday and Sunday was repaid in full as they, too, got to experience a full day of Canoemobile water education at Broad Ripple Park the following week. Along with students from Paramount School of Excellence and Cold Spring School in Indianapolis, the cadets received instruction in:

- Paddling techniques
- Water safety
- Watersheds and pollution issues affecting them
- Water chemistry sampling and analysis
- Habitat assessment
- Aquatic macroinvertebrate sampling and identification
- The effect of pollution on macroinvertebrates
- Various forestry issues
- Teamwork and more



IDEM's Hoosier Riverwatch and Watershed Assessment and Planning Branch staff, the Indiana Department of Natural Resources' Outdoor Recreation and Fish and Wildlife staff, Indiana Conservation Officers, and Trees Indiana staff assisted with the training stations. Special thanks to the Indiana Department of Natural Resource's Division of Outdoor Recreation for funding this wonderful hands-on experience!



**2015
Canoemobile
Crew in
Indianapolis!**



Photo Album: Autumn 2015 Hoosier Riverwatch Workshops and Events



Students in a service-learning class at Indiana University in Bloomington installed storm drain markers. This is the fifth year and ninth consecutive class that Cathy Meyer & Kriste Lindberg taught Hoosier Riverwatch and other watershed protection techniques, thanks to Indiana University instructor Benjamin Burlingham.



Saints Francis and Clare Catholic School students (Johnson County) explored East Fork White Lick Creek during October 2015 outings led by teacher Jeff Karns.



Bluffton-Harrison Middle School classes (Wells County) spent four days sampling the Wabash River under the direction of teacher Beverly Balash and General Motors mentors, headed by George Kioultzopoulos, in September and October 2015.



General Motors mentors from Kokomo assisted Maplecrest Middle School students during a sampling event on September 25, 2015.



Students from Saint Richards Episcopal School (Indianapolis) studied water quality at Geist Reservoir and Fall Creek under the tutelage of Noelle King on November 4, 2015.



Kids and adults alike enjoyed collecting and viewing aquatic insects during "Bug Fest" at Southeastway Park in Indianapolis on August 30, 2015. Staff and volunteers from Hoosier Riverwatch, Holliday Park, and Mt. Vernon and Franklin Central high schools assisted in the pond/aquatic portion of this event. In addition to tromping through pond mud, other highlights of the day appeared to be face painting, the butterfly tent, tarantula handling and cricket spitting! Ugh!



Photos by Cathy Marx and Southeastway Park staff

Database Tools: Visualizing Hoosier Riverwatch Data

In the previous edition of this newsletter, you saw the 'skin' (the appearance) of the newly upgraded database located at www.hoosieriverwatch.com. You also caught a glimpse of the front page graphics and the robust options for searching the database.

Recently, the Visualization tools were completed and made available for your use. Here are some of the functions that enable you to view and/or analyze data in the database.

Screenshot 1 (upper right) opens up the first of several choices presented upon clicking on the Visualize button in the tool bar (orange oval). From here on, you will be given several options to help you narrow in on the data you wish to view/analyze.

Screenshot 2 shows the next set of options available to you, depending on whether you previously selected multiple or single locations.

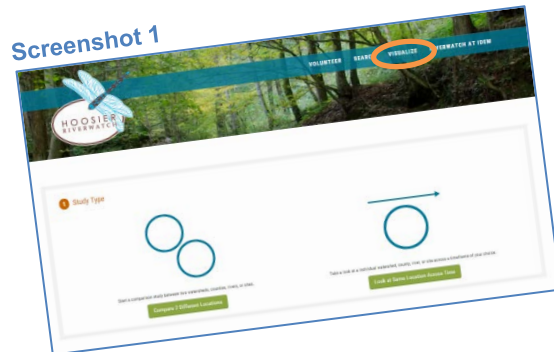
Screenshot 3 shows three of the four ways you can select and view data, including by:

1. Watershed
2. County
3. Waterbody (drop down menu not shown here)
4. Site

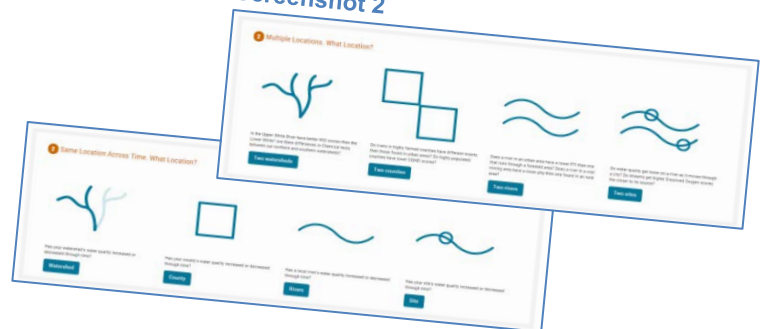
Note in the lower portion of the County screen, a parameter list reveals the data available to you once your previous selection has been made.

In **Screenshot 4**, bar charts are displayed as you begin choosing which parameters you are interested in. Just deselect a parameter to turn off its respective bar chart. Remember, since the upgraded database is now mobile-ready, just scroll down to see additional charts.

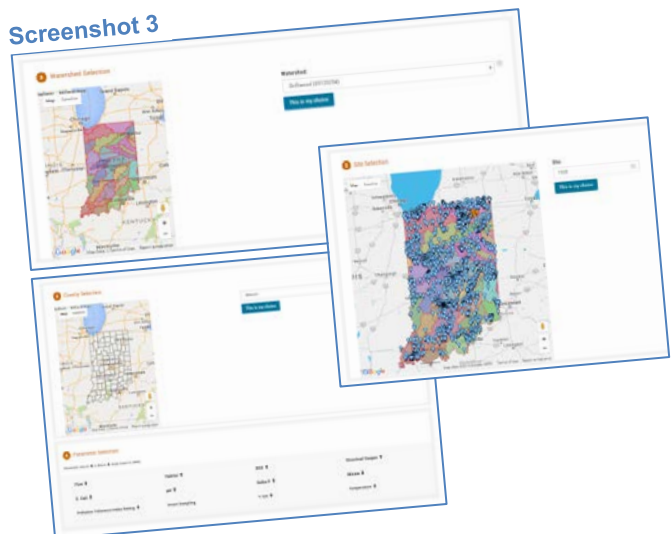
Screenshot 1



Screenshot 2



Screenshot 3



Screenshot 4



(continued on next page)

Visualizing Hoosier Riverwatch Data *(continued from page 6)*



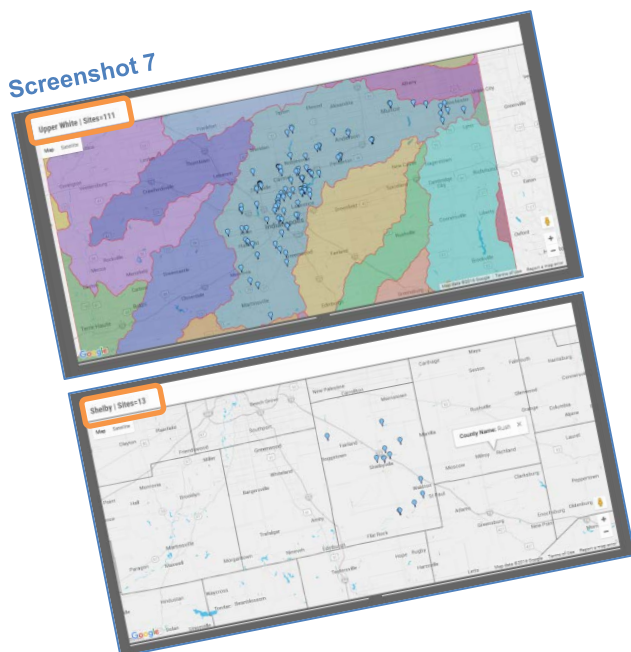
Screenshot 5 shows a line graph once you have selected “More Details” below a particular bar chart (first upper orange arrow). Each line graph will also include data for the entire state of Indiana, as found in the database. This example shows dissolved oxygen for the Upper White River watershed from 1994-2016.

Screenshot 5 also shows how you can compare two parameters with each other (second lower orange arrow). This choice gives you different “Y” axes for comparison purposes, as well as pulling the data into monthly averages.



Screenshot 6 is a quick view to show that hovering your cursor over a chart (bar, line, etc.) will reveal the data behind the chart (orange oval). For instance, we see that there are 562 data records with an overall average of 8.81 mg/L dissolved oxygen concentration for the entire state (blue line). If you hovered the cursor over the green line, the pop-up would show 51 records with an average dissolved oxygen of 9.59 mg/L for the Lower East Fork White River.

Screenshot 6 has an orange arrow that points to a small menu from which you can save or print the graph or chart.



Screenshot 7 shows that your original selection remains visible at the bottom of the screen as a reference. This makes it relatively easy for you to see the number and location (orange rectangles) of the sampling sites from which the data are being pulled.

Data review options not available to the user via the Visualize tools can sometimes be found via the database’s Search tool, as discussed in the previous issue of *Riffles & Pools*.

Special Announcement

Riffles & Pools will be published on a quarterly basis, rather than bimonthly.

Stay tuned for more good information throughout 2016 and in the coming years!

Latitudes and Longitudes: Getting Hoosier Riverwatch Back on the Map

What? There are Hoosier Riverwatch sites in central China!

Argh! There are even a few near the North Pole.

Oh no! How did those Hoosier Riverwatch sites end up in the Atlantic Ocean near Africa?

Well, owing to the lower accuracy rates of locational technology 20 years ago, coupled with some data entry errors, more than 500 (~25 percent) of the Hoosier Riverwatch sampling sites contained incorrect or missing latitudes and longitudes.

To tackle this issue, Hoosier Riverwatch staff put a call out for assistance from our dedicated, trained instructors. **Kudos** to those instructors and/or volunteers who had time and took the opportunity to help with this task! **Lucky** for us that many of the early database users added good site descriptions to the database! **Thanks** also to Michelle Ruan, a recently hired IDEM employee, who lent a quick and talented hand in this effort! A heartfelt thanks to each and every one of you!

There are still a few sites with errors or missing locational data. So, if you find a site we overlooked, drop us an e-mail and let us know.

Happy Anniversary to Many Key Players in the Hoosier Riverwatch World!

200 years State of Indiana

100 years Indiana State Parks

30 years Indiana Department of Environmental Management

20 years Hoosier Riverwatch Database!!!

15 years Hoosier Riverwatch instructors:

- Darci Zolman
- Mary Cutler
- Nancy Brown

10 years Hoosier Riverwatch instructors:

- Jane Loomis
- Joe Exl

5 years Recipients of Hoosier Riverwatch Monitoring Grants who were still monitoring wadeable streams as of Autumn 2015:

- Alliance of Indiana Rural Water
- Chesterton High School
- Hoosier Chapter of the Sierra Club
- Indiana University Service Learning in Chemistry Class
- Manchester Junior/Senior High School

Mark Your Calendars: Basic Hoosier Riverwatch Workshops

Saturday, April 9	Chesterton, IN – Coffee Creek Watershed Conservancy, 827 Sidewalk Road (9 AM – 4 PM CST). Contact Joe Exl at jexl@nirpc.org or 219-763-6060 (x137) for more information or to register for this workshop. Space is limited to 12 participants, so register soon!
Tuesday, April 19 & Thursday, April 21	Kokomo, IN – Kirkendall Nature Center at Jackson Morrow Park, 4200 S. Park Rd. (5 PM – 9 PM). One workshop, two sessions. Contact Sarah Brichford at sarah.brichford@howardcountyin.gov or 765-456-2217 for information or to register.
Saturday, April 23	Indianapolis, IN – Holliday Park Nature Center, 6363 Spring Mill Road (9 AM – 4 PM). Contact John Ulmer at 317-769-3500 or hoosierwatersheds@gmail.com for information or to register.
Saturday, April 23 & Saturday, April 30	South Bend, IN – St. Patrick's County Park: Brown Barn, 50651 Laurel Rd. (8:30 AM - 12:30 PM). One workshop, two sessions. Register <i>by April 15</i> with Shelley Chaffee at 574-654-3155. Or contact her at schaffee@sjcparks.org for more information.
Friday, May 6	Bloomington, IN – Karst Farm Park Commons, Bloomington (9 AM – 3 PM). Contact Cathy Meyer at cmeyer@co.monroe.in.us or 812-349-2800 for information or to register.
Saturday, May 7	Evansville, IN – Wesselman Nature Center, 551 N. Boeke Rd. (8 AM – 3 PM CST). Instructor will be Kevin Miles. For information or to register, please contact Gena Garrett <i>by April 22</i> at ggarrett@wesselmannaturesociety.org or 812-479-0771 (x102).
Monday, May 9	Lawrenceburg, IN – Hidden Valley Lake Property Owners Association Office, 19303 Schmarr Dr. (9 AM – 4 PM). Instructor will be Carol Newhouse. Contact Jennifer Hughes at jennifer.hughes@in.nacdnet.net or 812-926-2406 (x109) for information or to register.
Friday, May 13	Bristol, IN – Baldwin Schoolhouse, Bonneyville Mill County Park (9 AM – 4 PM). Register <i>before May 6</i> with Krista Daniels at krista@elkhartcountyparks.org or 574-875-7422.
Friday, May 13	Paoli, IN – Location to be determined (9 AM – 4 PM). Contact Michael Wilhite at OrangeSWCD@gmail.com or 812-723-3311 (x3) for information or to register.
Wednesday, May 18	Princeton, IN – U.S. Department of Agriculture Service Center, 229 S. Second Ave. (8 AM – 3 PM CST). For information or to register contact Carrie Parmenter at carrie.parmenter@in.nacdnet.net or Ann Ice at ann.ice@in.nacdnet.net .
Thursday, June 30	North Webster, IN – Community Center, 301 N. Main St. (8:30 AM – 4:30 PM). Contact The Watershed Foundation at 574-834-3242 or admin@watershedfoundation.org for information or to register.



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

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Hoosier Riverwatch Database:
www.hoosierriverwatch.com



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subscribe in the upper right)

Dedicated to the memory of Steven Newhouse (1951-2015)

.....
Aquatic Entomologist since 1977,
Hoosier Riverwatch Technical Advisor
& Supporter since 1995,
and
IDEM Employee 1989-2009



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*.



"The only way that we can live is if we grow. The only way that we can grow is if we change. The only way that we can change is if we learn. The only way that we can learn is if we are exposed. And the only way that we can become exposed is if we throw ourselves out into the open. Do it. Throw yourself."

— C. JoyBell C., Goodreads Author