

Riffles & Pools

Office of Water Quality www.idem.IN.gov



A sunfish welcoming the fall season in Marion County, Ind.

Greetings Riverwatchers!

The fall weather is finally upon us, and field season is quickly wrapping up. Workshops are coming to an end for the year, but we have accomplished great work in 2021 despite ongoing challenges. Many thanks to our wonderful instructors who have persevered through these times to continue the mission of the Hoosier Riverwatch program!

If you are new to Hoosier Riverwatch or want to learn more about us, check out www.in.gov/ideM/riverwatch.

We are currently in the process of selecting a new Hoosier Riverwatch coordinator to replace Carol. She has done a tremendous job in leading the program for many years and will be missed in this role. Please be patient through this transition, and we will continue to do our best to fulfill your equipment and workshop needs. We hope to make a strong start to the 2022 season.

– Caleb Rennaker, Technical and Logistical Services Section Chief
Watershed Assessment and Planning Branch

Summer/Fall 2021

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MARK YOUR CALENDARS!

Register for the
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November 5

Hoosier
Riverwatch is
administered by



Watershed Success Stories: Kilmore Creek and Stump Ditch

The 12th installment in [stories of watershed success](#) efforts collected by IDEM staff and grant recipients over the years:

Stump Ditch and Kilmore Creek account for approximately 11.6 miles of stream in the South Fork Wildcat Creek (SFWC) watershed in Clinton and Tipton Counties. The Indiana Department of Environmental Management (IDEM) listed Kilmore Creek and Stump Ditch on its Clean Water Act (CWA) Section 303(d) list of impaired waters in 2006 due to impaired biotic communities. Following years of best management practice (BMP) implementation, paired with education and outreach in the watershed, follow-up sampling by IDEM in 2019 on Kilmore Creek and Stump Ditch showed that both segments are now fully supportive of aquatic life. IDEM will propose to remove both biotic community impairments from its impaired waters list in 2022.

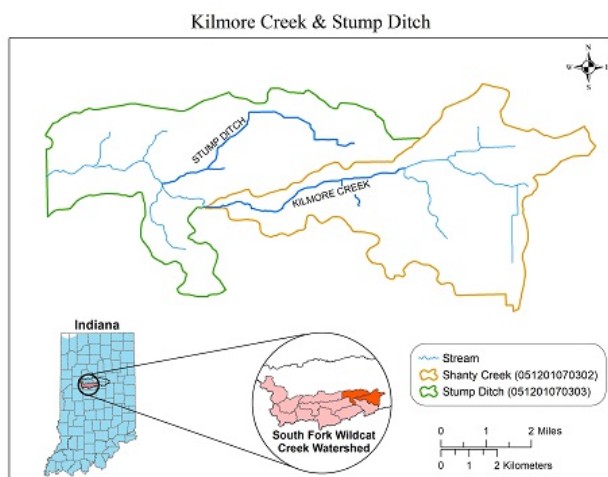


Kilmore Creek in Clinton County.

Photo courtesy of Indiana Department of Environmental Management (IDEM)

Kilmore Creek and Stump Ditch are within the SFWC watershed in Clinton and Tipton Counties. Land use throughout the watershed is primarily cultivated crops (>80%) and includes minor land uses of grasslands and wooded areas that are heavily fragmented.

In 2004, IDEM conducted a biological study on the SFWC watershed. Monitoring sites on Kilmore Creek and Stump Ditch had failing index of biotic integrity (IBI) scores (i.e., scores less than 36 in Indiana), which indicate that the streams were not supporting a well-balanced aquatic community. The fish community scores on Kilmore Creek and Stump Ditch were 34 and 32, respectively. This caused IDEM to list both streams on its 2006 CWA section 303(d) List of Impaired Waters for impaired biotic communities. The impaired reach of Kilmore Creek is at the headwaters of the stream in the Shanty Creek subwatershed. Stump Ditch drains into a portion of Kilmore Creek in the subwatershed directly downstream.



To address impairments, IDEM developed a total maximum daily load (TMDL) for *E. coli*, total suspended solids, total phosphorus, and nitrate-nitrite in 2008 for the SFWC watershed. The TMDL identified rural runoff as the most significant source of total suspended solids, total phosphorus, and nitrate-nitrite due to most of the land use being agricultural. Streambank erosion was also reported as a potentially significant source of sediment loads. According to the 2012 SFWC Watershed Management Plan (WMP), surveys indicated that 90% or more of streambanks were unbuffered along Kilmore Creek, and Stump Ditch lacks riparian buffers almost entirely.

Watershed Success Stories: Kilmore Creek & Stump Ditch (cont.)

For over two decades, stakeholders have been working to improve the health of the SFWC watershed. With funding provided by the Indiana Association of Soil and Water Conservation Districts, the Wildcat Creek Watershed Network (now known as the Wildcat Creek Watershed Alliance) hired an executive director/watershed coordinator to develop a long-term strategic Wildcat Creek watershed plan. This served as the foundation for future planning and implementation efforts within the watershed.

The Clinton County Soil and Water Conservation District received a CWA section 205(j) grant in 2009 to draft an extended nine-element SFWC WMP, which it began implementing in 2012.



Before (left) and after (right) showing BMP implementation on Stump Ditch. The two-stage ditch increases bank stability while improving drainage and ecological functions. *Photos courtesy of Clinton County SWCD.*

Along with education and outreach efforts throughout the watershed, landowners implemented a range of BMPs in the Shanty Creek and Stump Ditch subwatersheds, such as cover crops (3,220 acres), nutrient and pesticide management (39,567 acres), riparian buffers (9 acres), and 3,780 feet of two-stage ditch on Stump Ditch. The combination of these practices reduced harmful pollutants (e.g., nutrients, sediment) from entering the streams, thereby improving the streams' overall quality and health.

Annual surveys conducted with local citizens indicated some notable changes from 2012 to 2014 relating to personal beliefs on water quality. Results showed an increase from 26% (in 2012) to 55% (in 2014) of respondents who strongly agreed that they had a personal responsibility to help protect water quality. Additionally, 55% of respondents in 2014 (compared to only 21% in 2012) strongly agreed that the way they take care of their property can influence water quality in local streams and lakes.

In 2019, IDEM conducted follow-up monitoring, which showed an improved fish IBI score of 42 on Kilmore Creek and scores ranging from 36–38 on Stump Ditch. These are notable improvements from the scores of 34 and 32 in 2004 on Kilmore Creek and Stump Ditch, respectively. Additionally, habitat showed improvements (e.g., deeper pools, higher quality riffles) during the timeframe. Habitat scores on both Kilmore Creek and Stump Ditch showed improvements in categories such as less bank erosion, silt cover, and embeddedness in the streams, which indicate less sediment entering from surrounding landscapes. Due to fish IBI scores indicating a well-balanced aquatic community, IDEM is proposing to remove the IBC impairments from these segments on its 2022 impaired waters list.

IDEM's Watershed Assessment and Planning Branch (WAPB) has recently developed a new tool to help guide and track watershed planning efforts across the state. Specifically, the tool focuses on areas where a watershed management plan (WMP) and/or Total Maximum Daily Load (TMDL) has been developed. The WMP and TMDL Reports Search (WATRS) tool is fully interactive and allows anyone to easily search their watershed, stream, or address for watershed planning efforts throughout Indiana. You can access the tool [here](#).



Restoring Indiana's Waterways Through Local Partnerships

How the IDEM Watershed Planning and Restoration Section works with local watershed groups to improve water quality throughout Indiana.

May 14, 2021

[Introduction](#)
[Assessment](#)
[Integrated Waters](#)
[TMDLs](#)
[Section 106](#)
[Science Section](#)
[How to Get Involved](#)

[illegible]

Indiana Watershed Leadership Academy – Registration Open

Learn To Be a Leader in Watershed Management

Sign up now to improve your watershed management skills!

If you are interested in water quality and watersheds, consider applying for the 2022 Indiana Watershed Leadership Academy. The 16th Annual Academy includes both virtual and in-person workshops to learn watershed and leadership skills. This format allows you to take advantage of Indiana's watershed experts from the comfort of your home or office from January through March, followed by two face-to-face sessions on March 29-30 and May 25, 2022.

The Academy, organized by Purdue University with support from IDEM and other Indiana conservation agencies and organizations, gives participants the chance to:

- Engage in basic and advanced level watershed topics covering leadership principles, watershed science, organization and communication, technology and GIS, stakeholder involvement techniques, and policy skills.
- Meet, learn from, and engage with others who work in watershed management.
- Interact with topic experts.
- Gain strategies, skills, and resources for successful watershed management.
- Earn a professional certificate in watershed management.

Enrollment deadline: Nov. 5, 2021

Website: For the online application and information about the Academy, visit <https://engineering.purdue.edu/watersheds/academy.html>

Session information:

- Six virtual Zoom workshops every other Wednesday from Jan. 5 to March 16, 2022, from 9 a.m. to 12:15 p.m. Each session includes live presentations, small group discussions, and question and answer sessions.
- A two-day in-person workshop held at the Canyon Inn at McCormick's Creek State Park on March 29-30, 2022.
- In-person graduation presentation and next steps on May 24, 2022, from 9 a.m. to 3 p.m. at The Garrison at Fort Benjamin Harrison State Park.

Format: The Academy includes six live virtual group sessions, distance learning modules to be completed on your own, and two in-person sessions. All distance learning modules and discussion forums are hosted online with details and guidance emailed to participants in advance of the module, discussion forum, or virtual workshop. The Academy runs from January to May 2022.

Recognition: Participants who complete all requirements earn a Purdue University Continuing Education Professional Certificate in Watershed Management.

For more information, please contact Sara Peel, speel@purdue.edu, or see **the Academy Web Page** www.purdue.edu/watersheds.

Hoosier Riverwatch Instructor Locations

HOOSIER RIVERWATCH Instructor Locations as of Autumn 2021

Allen County

Sharon Partridge - Fort Wayne
Maumee Watershed Alliance
(260) 755-8111
ssp2655@gmail.com

Bartholomew County

Julie Lowe - Columbus
Sierra Club, Winding Waters Group
(317) 345-8355
j_lowe66@yahoo.com

Clinton County

Leah Harden - Frankfort
Clinton County SWCD
(765) 659-1223 (Ext. 3)
leah.harden@in.nacdn.net

Dubois County

Nicholas Servis - Jasper Vincennes
University
(812) 481-5934
nservis@vinu.edu

Elkhart County (2)

Krista Daniels - Goshen
Elkhart County Parks
(574) 875-7422
krista@elkhartcountyparks.org

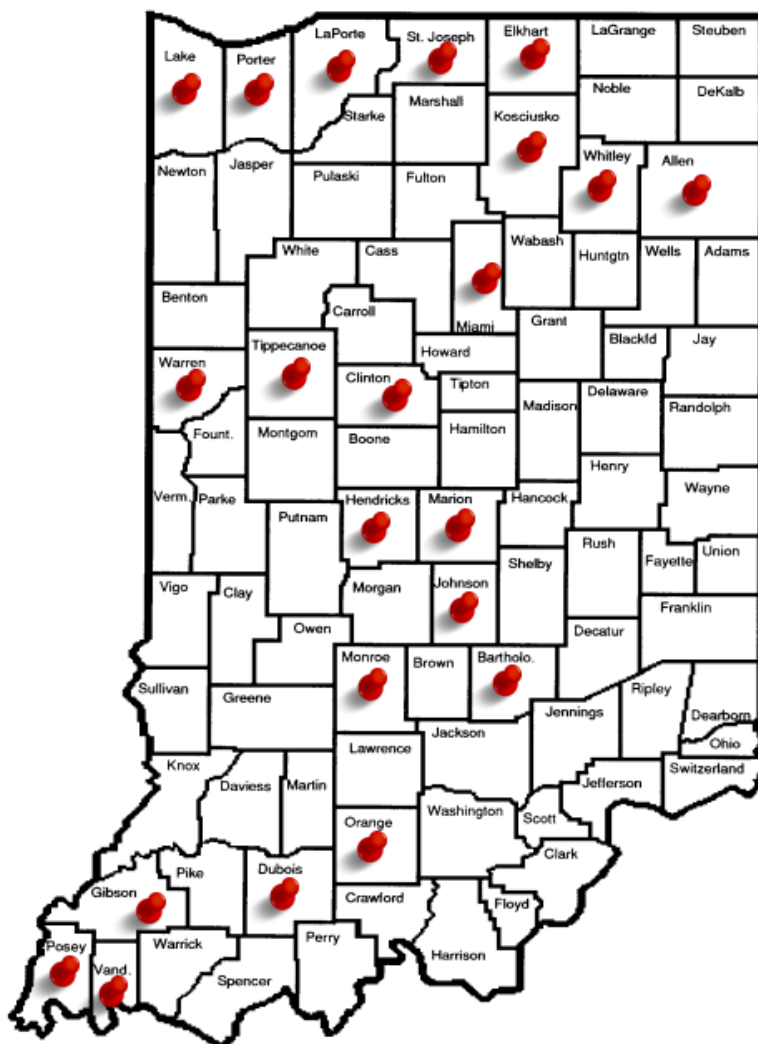
Nancy Brown - Syracuse
(574) 518-1054
nschlemmerbrown@yahoo.com

Gibson County

Ann Ice - Hazleton
(812) 784-2285
ann2ice@gmail.com

Hendricks County

Sarah Wolf - North Salem
Hendricks Co. Parks & Rec.(765)
676-5437
swolf@hcparks.net



HOOSIER RIVERWATCH INSTRUCTOR LOCATIONS - 2021

Johnson County

Deanna Garner - IDEM Recycling
Coordinator
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dgarner@idem.in.gov

Kosciusko County (2)

Lyn Crighton - North Webster
The Watershed Foundation
(574) 834-3242
lyn@watershedfoundation.org

Darci Zolman - Warsaw
Kosciusko County SWCD (574)
267-7445 (Ext. 3)
darci.zolman@in.nacdnet.net

Lake County

Chaunce Sprouse - Gary (219)
344-8519
cre.sprouse@gmail.com

LaPorte County

Nicole Messacar - LaPorte
LaPorte County SWCD
(219) 326-6808 (Ext. 2115)
nmessacar@laportecounty.org

Marion County (3)

Seth Harden - Indianapolis
Upper Wabash Project Director
The Nature Conservancy (765)
414-5861
seth.harden@tnc.org

Cindy Jewell - IDEM
Office of Water Quality
(317) 308-3081
cjewell@idem.in.org

Miami County

Jamin Beisiegel - Peru
Peru Utilities
(765) 473-7651
perustormwater@gmail.com

Monroe County (3)

Cathy Meyer - Bloomington (812)
837-2290
cathygotm@gmail.com

Kriste Lindberg - Bloomington City
of Bloomington Utilities (812)
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Sandy Belth - Bloomington
Monroe Co. Parks & Rec.
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belthbirds@aol.com

Orange County

Michael Wilhite - Paoli
Orange County SWCD
(812) 203-3033
michael.wilhite@in.nacdnet.net

Porter County

Candice Smith - Beverly Shores
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candicepetersonsmith@gmail.com

Posey County

Carrie Parmenter - Mount Vernon
Posey County SWCD
(812) 838-4191 (Ext. 3)
carrie.parmenter@in.nacdnet.net

St. Joseph County (2)

Shelley Chaffee - South Bend
St. Joseph County Parks
(574) 277-4828
schaffee@sjcparks.org

Jennifer Krauser - South Bend
(509) 595-2529
krauser.jenn@gmail.com

Tippecanoe County

Mary Cutler - West Lafayette
Tippecanoe County Parks & Rec.
(765) 567-2993
mcut@msn.com

Vanderburgh County (2)

Derek Cox - Evansville
Wesselman Nature Society
(812) 479-0771 (Ext. 111)
dcox@wesselmannaturesociety.org

Kevin Miles - Evansville
(c/o Gena Garrett)
Wesselman Nature Society
(812) 479-0771 (Ext. 102)
kevin.miles@tema.toyota.com

Warren County

Julie Speelman - Williamsport
(765) 299-6237
speelmanjulie1@gmail.com

Whitley County

Jane Loomis - Columbia City
Tippecanoe Watershed Foundation
(260) 799-4422
cjloomis7551@gmail.com

Mark Your Calendars

2021 Basic Training Workshops Have Come to an End

A Hoosier Riverwatch Basic Training workshop introduces you to hands-on water quality monitoring methods. You will learn about aquatic habitat, chemical, and biological assessment techniques. Sessions are held in- and out-of-doors. 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.

Workshops are free of charge. But it is important to register in advance using the contact given for the workshop you are interested in. Training does come at a cost to the program, however, as well as to the host and/or instructor. So, please, contact your instructor or host if you will *not* be able to attend the workshop for which you have registered.

Please remember that volunteers and instructors should abide by [federal](#), [state](#), and local protocols for social distancing, hand washing, and face masks as appropriate at the time of their training.

No training workshops are currently scheduled.

Longear Sunfish (*Lepomis megalotis*)



Longnose Gar (*Lepisosteus osseus*)



Rainbow Trout (*Oncorhynchus mykiss*)



Yellow Perch (*Perca flavescens*)



Photos courtesy of IDEM



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

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Hoosier Riverwatch Program:
www.idem.IN.gov/riverwatch

Hoosier Riverwatch Database:
www.hoosierriverwatch.com



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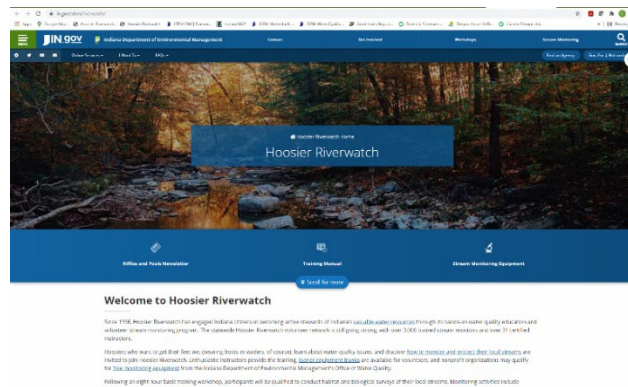


View and/or subscribe
to the State of Indiana's
Events Calendar (look for
subscribe in the lower left)

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 groundwater 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*.



Photo courtesy of Caleb Rennaker

Jasper City Mill on the Patoka River, Dubois County, Indiana.