



Working Together for a Better Understanding of Water Quality in Indiana

Water Summit Kick-Off
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Topics to be Covered

- IDEM's water quality monitoring programs and how data is used
- IDEM's Consolidated List and 303(d) List of Impaired Waters
- Opportunities to partner with IDEM through its Office of Water Quality (OWQ) External Data Framework (EDF)

Why IDEM Monitors Indiana Waters

- Clean Water Act (CWA) §305(b) requires IDEM to assess all waters of the state and to develop the CWA §303(d) List of Impaired Waters
- Support public health advisories and emerging water quality issues
- Support Office of Water Quality programs
- Support watershed planning and restoration activities
- Determine water quality trends and evaluate program performance



Monitoring Approaches

- Each of IDEM's water quality monitoring programs uses one of three general approaches based on what the agency needs to know:
 - **Probabilistic:** A stratified random approach to site selection
 - **Fixed:** Sites do not change from season to season
 - **Targeted:** Intentional selection of sampling sites based on specific monitoring objectives or decisions to be made

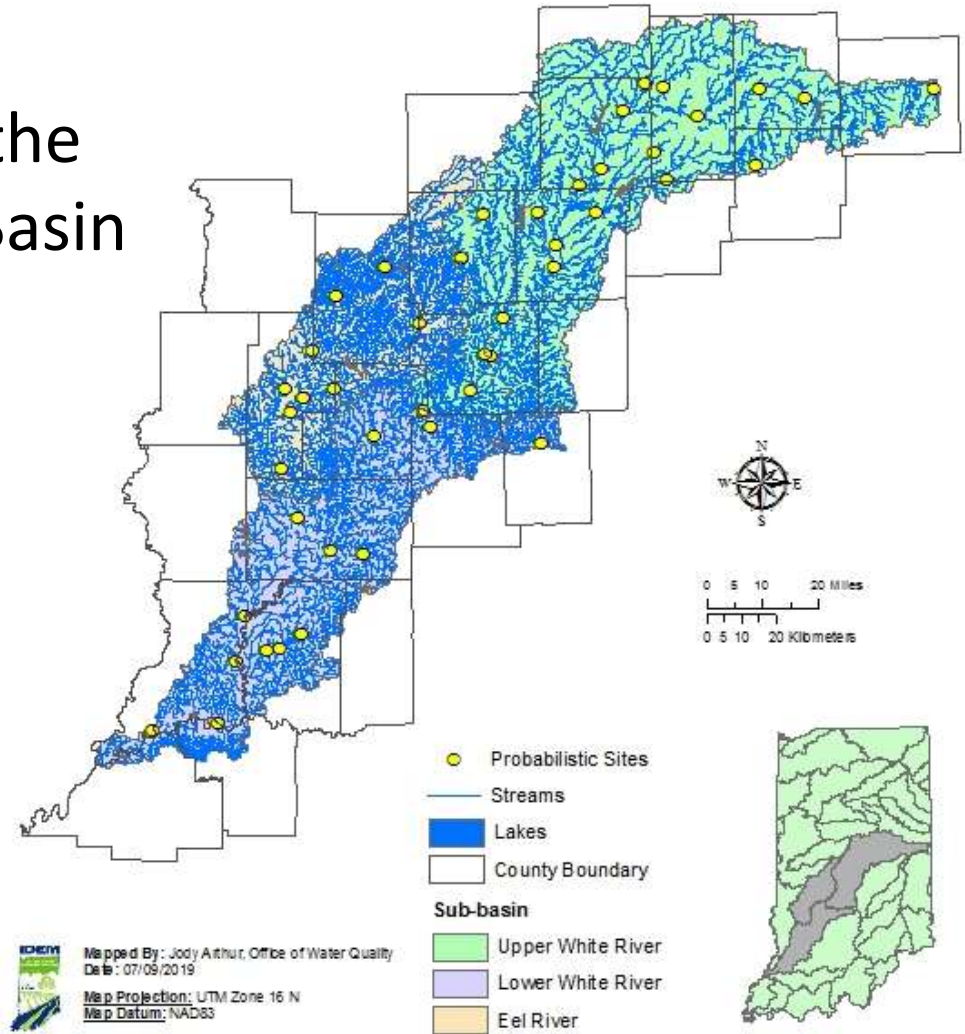
Probabilistic Monitoring

- Field and laboratory water chemistry, bacteria, and biological communities
- 38-45 sites randomly selected in one of nine major basins each year
- Randomness built into this sampling allows IDEM to use the data at two different scales



Probabilistic Sites: 2011

- Monitoring focused on the West Fork White River Basin
 - 45 sites in the basin as a whole
 - 23 sites in the Upper White River Watershed





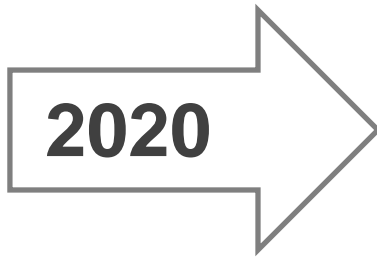
Upper Illinois River
2017



Great Lakes
2018



Ohio River Tributaries
2019



White River, West Fork
2020



Patoka River
2021



White River, East Fork
2022



Whitewater River
2023



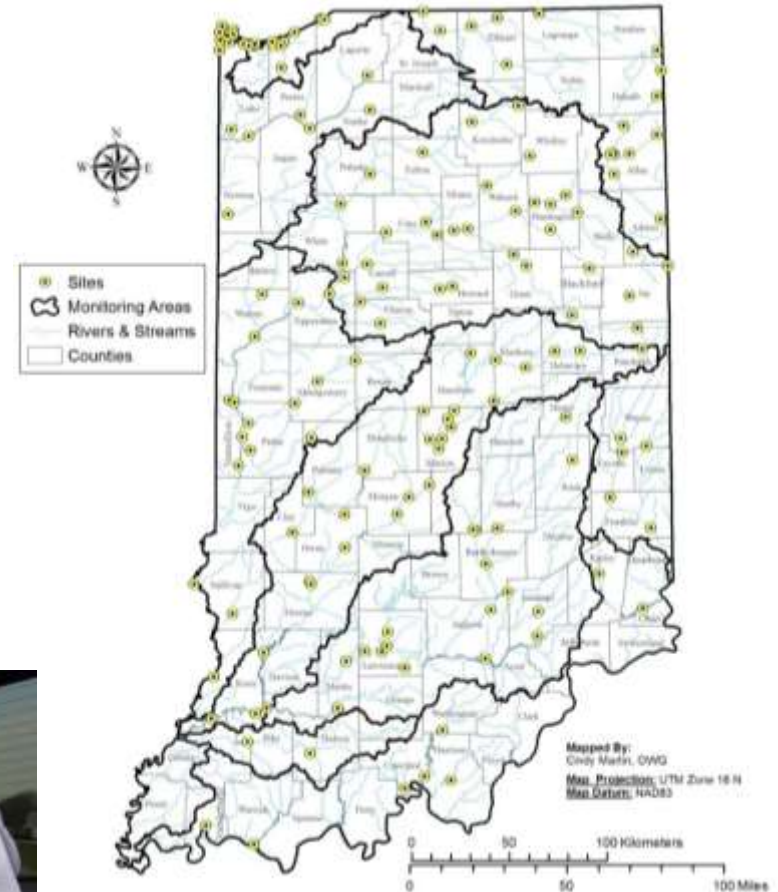
Upper Wabash River
2024



Lower Wabash River
2024

Fixed Stations

- Field and laboratory water chemistry, and bacteria monitored monthly on rivers and streams
- Established in 1957 with 49 sites located mainly at drinking water intakes and wastewater treatment plant outfalls
- Now 165 fixed locations



Targeted: Fish Tissue Contaminants

- Mercury and polychlorinated biphenyls (PCBs) in fish tissue at 35-45 sites each year on rivers, streams, lakes, and reservoirs
- Monitoring follows a five-year basin rotation and includes:
 - 23 “core” sites IDEM has been monitoring since the late 1970s
 - Lakes and streams commonly used for fishing
 - Sites that have known problems (“legacy issues”)



Targeted: Watershed Characterization

- Field and laboratory water chemistry and bacteria monitored monthly for one year; biological community monitored once in same year
- Modified geometric design based on drainage areas (12-digit watersheds) with sites located on bridge





CWA Sections 305(b) and 303(d)

- 305(b) requires states to:
 - Assess how well surface waters are supporting designated uses identified in the water quality standards (WQS)
 - Report IDEM's assessments to the U.S. Environmental Protection Agency (U.S. EPA)
- 303(d) requires states to submit a list of impaired waters to U.S. EPA
- Both are combined into the Integrated Report (IR) submitted every two years

IDEM's Water Quality Assessments

- Based on narrative and numeric criteria expressed in Indiana's water quality standards
- Answering the question, "How well do our waters support their designated uses?"



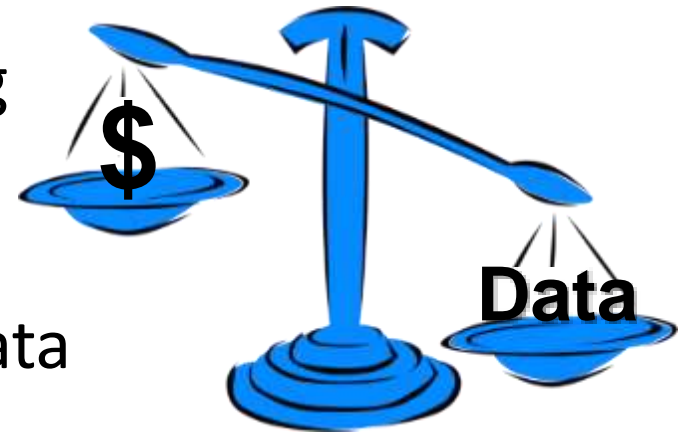


IDEM's Consolidated List and 303(d) List

- The Consolidated List
 - A summary of everything IDEM staff know about how well each waterbody assessment unit is supporting its designated uses
- The 303(d) list
 - A *subset* of the Consolidated List – those waters not supporting one or more uses
 - Waters that require a total maximum daily load (TMDL)
- Both lists are needed to see the big picture

Data is Key to Understanding Indiana Waters

- Indiana, like many states, is facing increasingly limited monitoring resources coupled with ever increasing need for monitoring data
- Effective water resource management across the board requires data of known quality, and LOTS of it





IDEM's External Data Framework

- A process to help organizations and individuals share their water quality data with IDEM for potential use in assessments and other decision-making
- Technical assistance available to help you develop and document your monitoring plan and to share your data with IDEM
- Participation is completely voluntary



Tier 1 Uses

- Education and building awareness of water resources and the issues affecting them
- Supplementary information for total maximum daily load (TMDL) development
- Supplementary information for OWQ's Integrated Report

Tier 2 Uses

- Supplementary information for use in planning or prioritizing OWQ's monitoring and TMDL development
- Demonstrating success of water quality restoration or protection measures
- Watershed management planning
- Determining water quality trends
- Screening data

Tier 3 Uses

- CWA 305(b) water quality assessment and 303(d) listing decisions
- Total maximum daily load modeling
- Determining representative background conditions for National Pollutant Discharge Elimination System permits
- Determining/changing the antidegradation classification of a waterbody

Increasing Level of Scientific Rigor

How Might Your Data Fit?

- Can accept data collected at any geographic scale, anywhere in the state
- Lakes, rivers and streams
- Inclusive by design
 - Based on the premise that all data have value
- The original purpose for collecting the data doesn't matter



Types of Data IDEM Can Accept

- Field measurements and flow data
- Chemistry and bacteria results from ambient water samples
- Fish tissue data
- Biological community data and habitat evaluations
- Algal biomass data





What IDEM Does with Your Data

- IDEM reviews the data set and any documentation provided with it to determine its level of data quality
- The data set is then assigned an EDF Tier, qualifying it for any of the uses in that tier.
- If the data is the right type for a given use, IDEM then checks any other use-specific requirements to determine whether the data can be used for that purpose.



EDF Tools & Support

The screenshot shows the 'Secondary Data Portal' website. At the top left is the IDEM logo. A teal navigation bar contains the links: 'ONLINE DATA ENTRY', 'USE THE TEMPLATE', 'REQUEST AN EDI', and 'SEARCH DATA'. Below the navigation bar, there are breadcrumb links: 'RIVERWATCH HOME' and 'SECONDARY DATA HOME'. The main heading is 'Secondary Data Portal'. The text explains that the portal provides tools for individuals and organizations conducting water quality monitoring in Indiana to share their data with the IDEM Office of Water Quality (OWQ). It includes sections for 'Who Should Use the Portal?', 'Selecting the Best Option for Data Submittal', and 'Questions?'. The 'Selecting the Best Option for Data Submittal' section lists three options: Online data entry, Downloadable Microsoft Excel Template, and Electronic Data Interchange (EDI). The 'Questions?' section provides contact information for the Secondary Data Coordinator and the Secondary Data Quality Assurance Manager. At the bottom, there is a navigation bar with icons and links for 'Online Data Entry', 'Use the Template', and 'Request an EDI'.

Secondary Data Portal

The Secondary Data Portal provides tools for individuals and organizations conducting water quality monitoring in Indiana to share their data with the Indiana Department of Environmental Management (IDEM) Office of Water Quality (OWQ).

Who Should Use the Portal?

The portal is intended for individuals and organizations interested in sharing their data through External Data Framework (EDF) and those that are conducting water quality monitoring under an OWQ Nonpoint Source (NPS) Program grant agreement.

Those conducting volunteer monitoring through the Hoosier Riverwatch Program and the Indiana Clean Lakes Program do not need to use the tools provided here to participate in the EDF. Based on OWQ's relationship with these programs, volunteers that submit their monitoring results through Hoosier Riverwatch and/or the Clean Lakes Program can be confident that their data will be automatically considered by OWQ for the potential uses described in the EDF.

Volunteers having completed Hoosier Riverwatch training are encouraged to instead enter their stream water quality data directly into the [Hoosier Riverwatch database](#) online. Likewise, Indiana Clean Lakes Program volunteers should continue to enter the data they collect into the [Clean Lakes Program database](#).

Selecting the Best Option for Data Submittal

The portal provides a three ways to share your data with OWQ:

- Online data entry – The best option for smaller or simpler data sets with relatively few sites, results, and/or parameters.
- Downloadable Microsoft Excel Template – Better for larger and/or more complex data sets and required for most NPS Program grant funded projects.
- Electronic Data Interchange (EDI) – A good option for organizations with ongoing monitoring programs that provide large and/or complex data sets with some regularity.

Questions?

Please contact the Secondary Data Coordinator with any questions about sharing your water quality data with IDEM's Office of Water Quality through this portal. If you are monitoring as part of a NPS Program grant project, please contact the Secondary Data Quality Assurance Manager with any questions regarding your options for data submittal.

Phone: (317) 306-3081
Email: WaterQualityEDF@idem.in.gov

Online Data Entry | Use the Template | Request an EDI



IDEM Invites You to Participate!

External Data Framework

idem.IN.gov/cleanwater/2485.htm

Contact

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