

SHARING AGRICULTURAL SCIENCE, TECHNOLOGY & DATA TO IMPROVE GREAT LAKES WATER QUALITY

A BI-NATIONAL WORKSHOP

Toward Sustainable Water Information: Do we have enough data to determine if BMPs are effective?

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The Northeast-Midwest Institute is a private nonprofit, nonpartisan research organization based in the nation's capital. Our mission is to promote economic vitality, environmental quality, and regional equity for the 18 Northeastern and Midwestern states. NEMWI conducts research and analysis, and develops and advances innovative policy ideas.



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Toward Sustainable Water Information

- Objective: Investigate and describe the ability of the NEMW region's water monitoring system to support decision making.
- Audience: Congress and decision makers
- How effective are BMPs and their implementation at reducing nutrients from nonpoint sources at the watershed scale?
- Can Shale Gas Development contaminate ground water or surface water?



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- What is your relationship with water quality monitoring?
 - A. I participate in a volunteer monitoring program
 - B. I collect water samples
 - C. I analyze data
 - D. I rely on water data to manage water resources
 - E. I drink water and take showers



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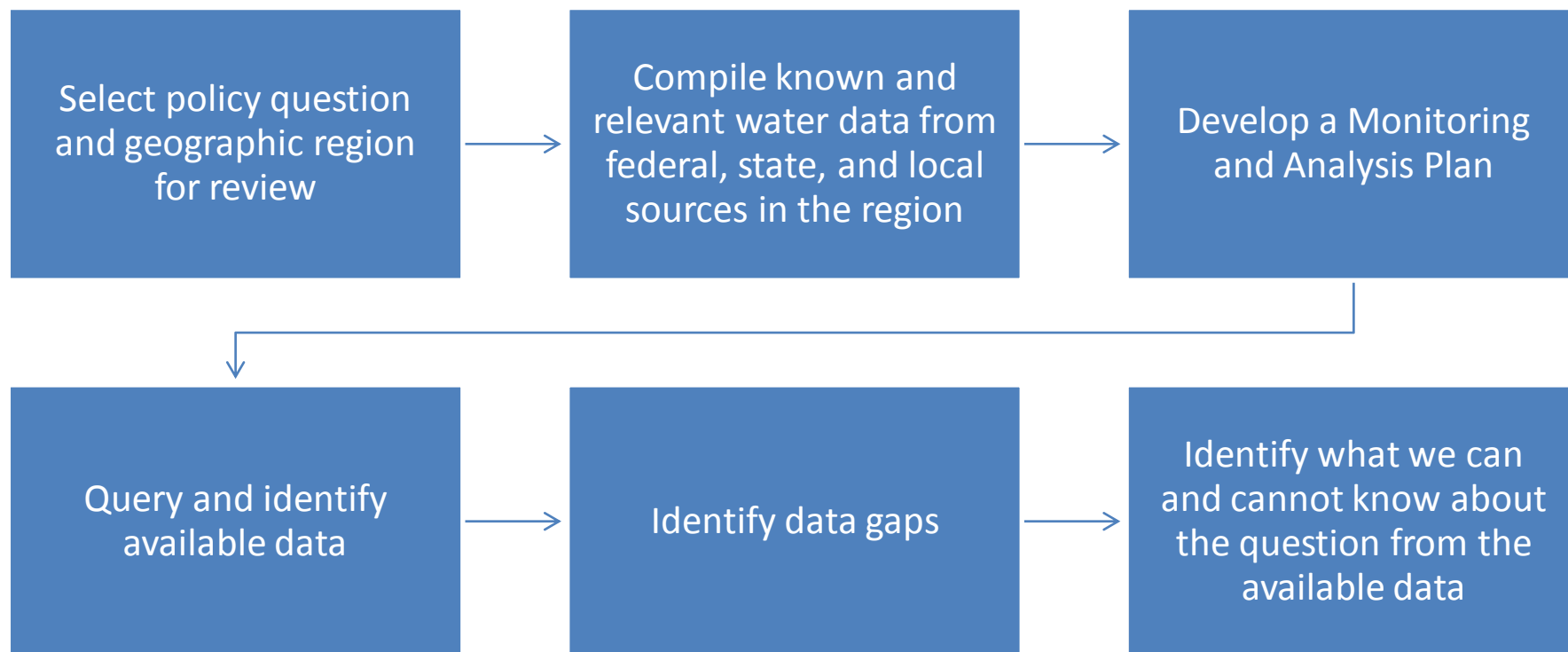
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- Do you think decision makers have access to the water data they need to effectively manage water resources?
 - A. Yes
 - B. The data they need are not available
 - C. The data have been collected but haven't been analyzed
 - D. The analysis exists but the information doesn't get into the hands of decision makers

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Case Study Process



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Nutrient Case Study

- **Policy Question:** How effective are BMPs and their implementation at reducing nutrients from nonpoint sources at the watershed scale?
- **Geography:** Lake Erie Basin



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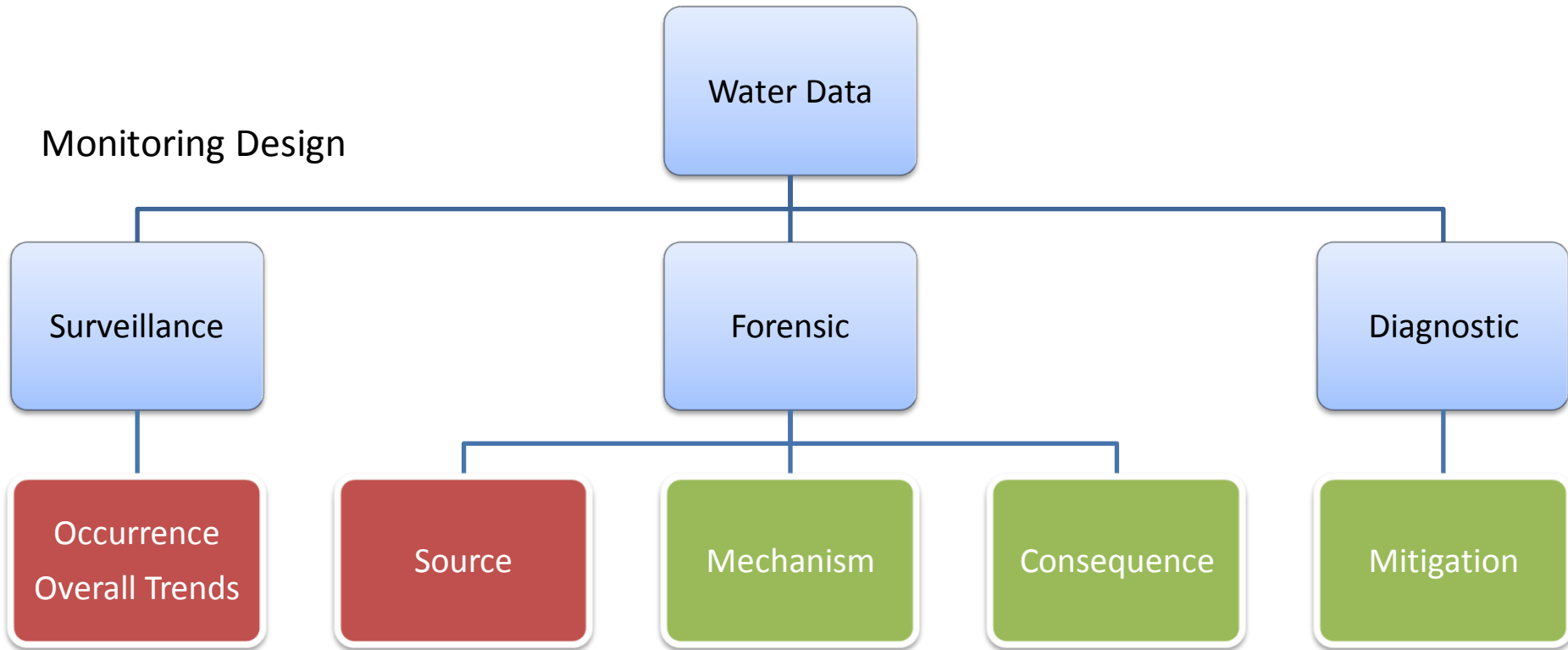
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Nutrient Technical Advisory Committee Members



| Person | Organization |
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| Anne Choquette | US Geological Survey |
| Pete Richards | Heidelberg University |
| Paul Stacey | Great Bay National Estuarine Research Reserve in New Hampshire |
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| Elizabeth Toot-Levy | Northeast Ohio Regional Sewer District |



Water Data and Policy Questions



Types of Policy Questions

-  = place based
-  = may be transferable



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Monitoring and Analysis Plan

- Identify how we will analyze the data
 - There must be a purpose for every piece of data described in the monitoring plan
- Monitoring Plan
 - Nutrient status
 - Ecosystem response
 - Details of BMP implementation



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Project Dataset

- Compiled by USGS from federal, state, academic, and local monitoring programs
- Electronic format
- Loaded into common template
- Can be used for spatial and temporal analysis

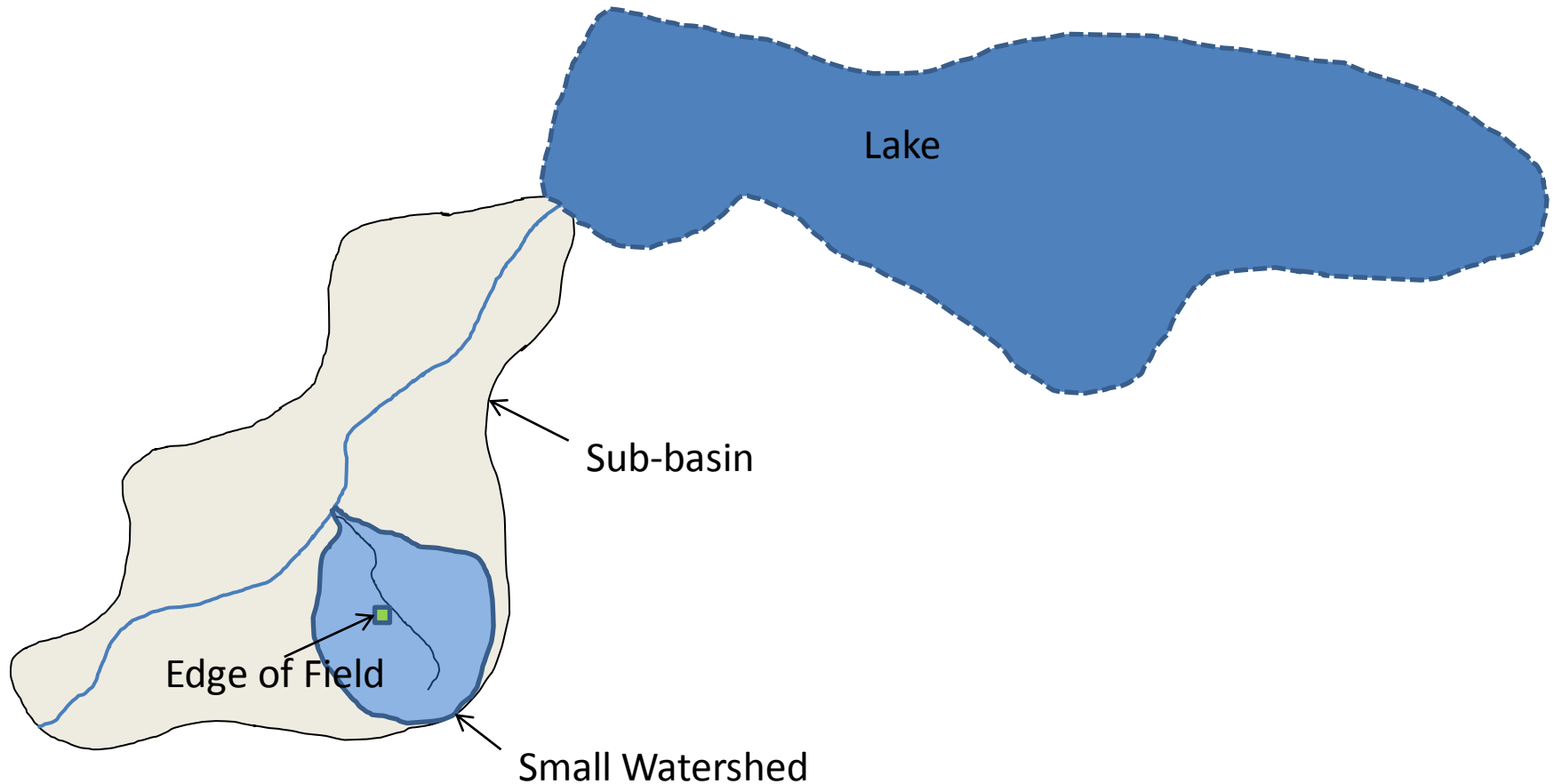
Nested Monitoring Scales

- Field or Plot
 - Is it needed in the Lake Erie Basin, or are data transferrable from other areas?
- Small Watershed
 - Before and After Monitoring
 - Paired Watershed
 - Many watersheds representing a range of BMP Implementation
- Sub-basin
 - Response lag

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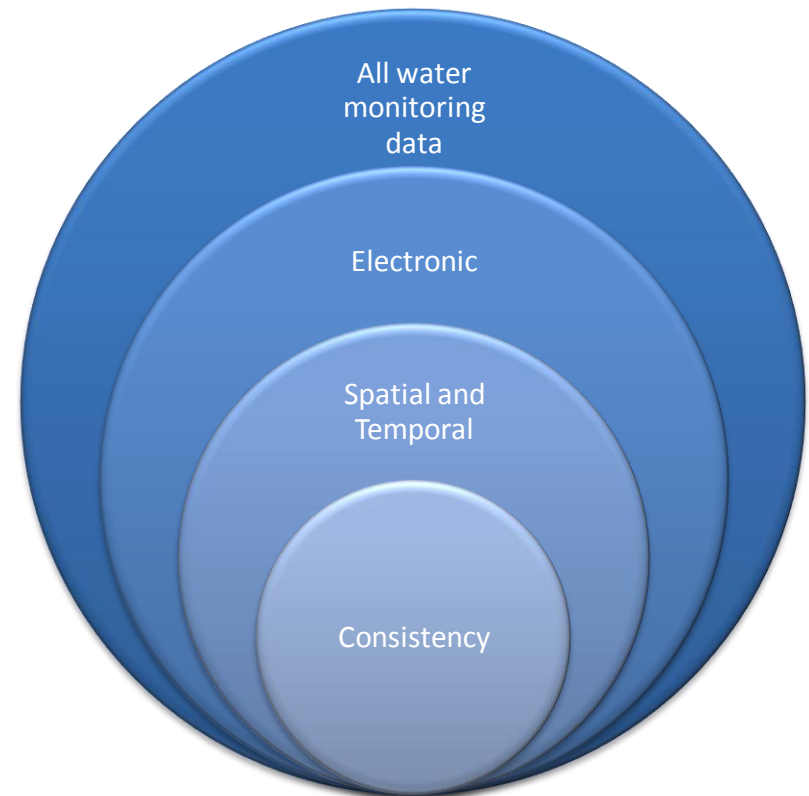
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Nested Monitoring Scales



Data Analysis

- Identify available data
- What can we know from the available data?
- How important are the data gaps? Are there high priority data sets?





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Study Limitations

- We are only evaluating the availability of water monitoring data, not:
 - BMP data
 - In-Lake data
 - Canadian data

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Project Next Steps



Case studies - Can we answer specific policy questions?

State of the Region:
Policy implications for the region

Collaborative Blueprint: Where do we go from here?

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- You can help!
 - Examples of monitoring plans, BMP evaluation in the Lake Erie Basin
 - Identify small watersheds in the Lake Erie Basin with extensive BMP implementation
 - Let me know about related work
- Contact Me
 - ebetanzo@nemw.org
 - 202-464-4008
- For more information see *Toward Sustainable Water Information* at www.nemw.org