Water Quality GIT Report Out

Making Science Work For You: How to strengthen the connection between water-quality studies and agricultural conservation practices

Dr. Kaylyn Gootman
November 27, 2023

Chesapeake Bay Program
Science. Restoration. Partnership.

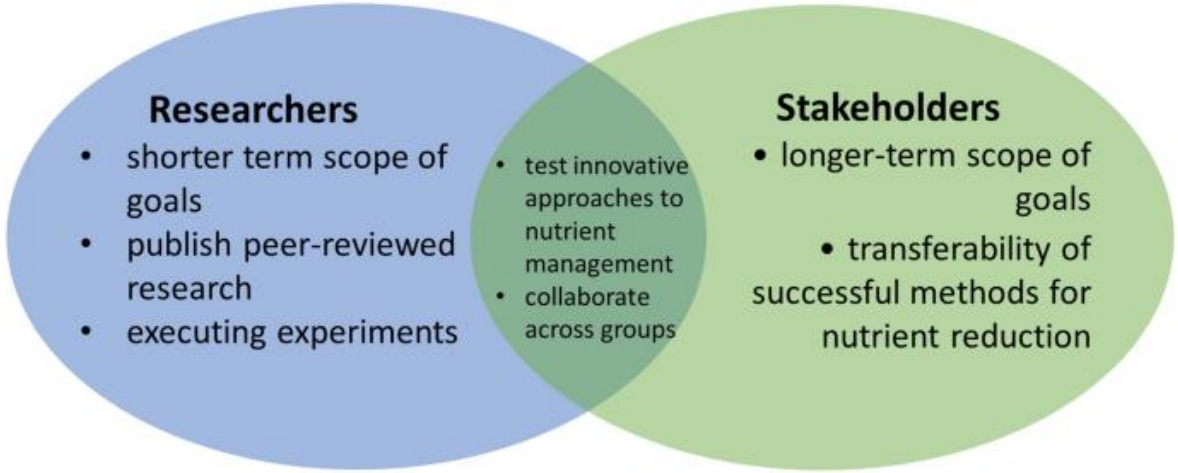
SUBMERSION SERIES

Acknowledgements

- Core Planning Team
  - Jimmy Webber, Kaylyn Gootman, August Goldfischer
- Extended Planning Team
  - Bill Angstadt, Alisha Mulkey, Breck Sullivan, Joe Wood, Ken Hyer, Kurt Stephenson, Mark Dubin, Alex Soroka, and others
- WQGIT Leadership Team
  - Suzanne Trevena, Jackie Pickford, Sushanth Gupta, Jeremy Hanson
- Speakers
  - Zach Easton, Scott Heidel, Matt Cashman, Lisa Duriancik, Elizabeth Hoffman, Jayme Arthurs, Gary Shenk, Mark Nardi
- Green Fin Studios
  - Lauren Huey, Paula Jasinski

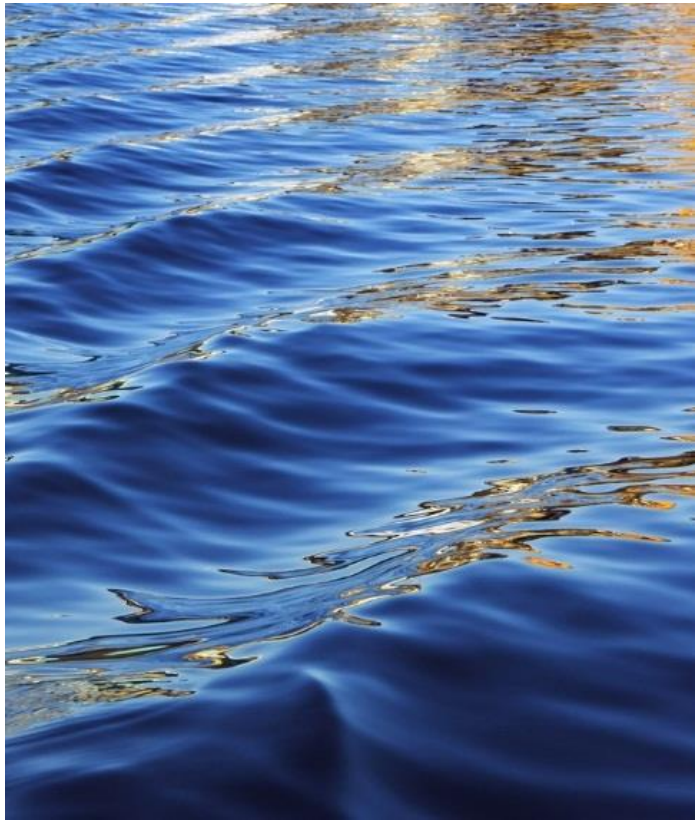
Webinar Planning Process

- Core planning team worked with a diverse team
- Planning calls and speakers included representation from > 15 unique CBP partner organizations
- Our main goal was to hear from researchers *and* stakeholders
- We thought it was important to provide a blend of different voices on such an important topic



Canfield et al., 2022

Webinar Objectives & Discussion Topics



Making Science Work For You:

How to strengthen the connection between water-quality studies and agricultural conservation practices

A Chesapeake Bay Program Submersion Series

September 14, 2023, 12:00 pm to 1:30 pm

Workshop Objectives:

To discuss lessons learned from water-quality studies that can inform the effective use of agricultural conservation practices. To identify how future water-quality studies can better address stakeholder needs.

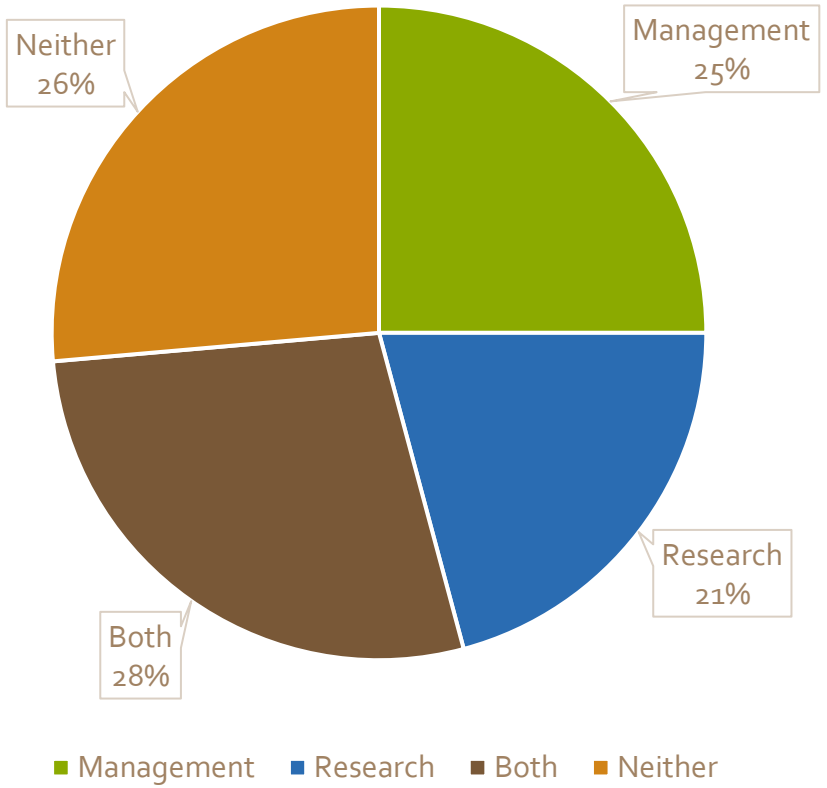
Discussion Topics:

1. How have water-quality studies provided insights that can inform the effective use of agricultural conservation practices?
2. How can future water-quality studies better address priority stakeholder questions about conservation effects and water-quality responses?

Photos courtesy of Will Parson, Chesapeake Bay Program

Attendee Breakdown

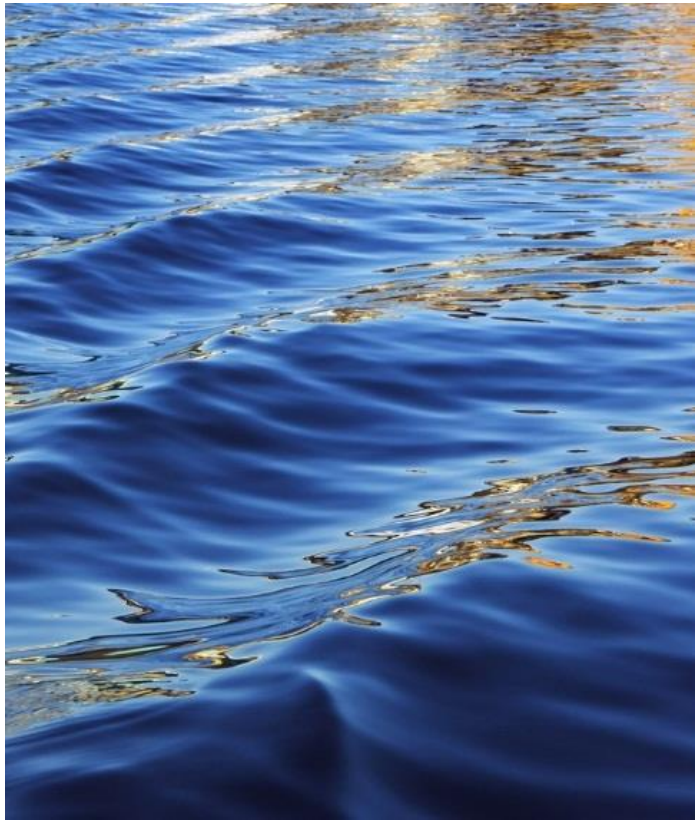
Are you a part of the Chesapeake Bay management or research community?



Core Planning Team Take Aways:

1) Pretty even split
2) Missed inclusion of other categories (e.g., Advocacy, Communications, Interested Public, Consultant)
3) Chesapeake Community is diverse

Webinar Content



Webinar Considerations

- Discussion of water-quality effects of agricultural conservation efforts
  - Water-quality effects = nutrient and sediment reductions in nontidal rivers and streams
  - Conservation efforts = practices and activities designed to reduce nutrient and sediment loads ("best management practices")
- Aimed to highlight lessons learned from water-quality studies
- Future workshop may focus on social-science considerations for improving conservation efforts
  - How do we incentivize conservation on the landscape?
  - How do we increase the willingness to adopt voluntary conservation efforts?
  - How do we effectively communicate scientific findings with the community?

Webinar Considerations

- Webinar included presentations from Chesapeake Bay researchers and managers
  - Researchers = scientists, advocates, and partners who generate technical insights that can help inform restoration and conservation in the Chesapeake
  - Managers = decision makers from local, state, and federal agencies or other groups who plan changes on the landscape (in coordination with producers and landowners) or changes in policy to improve water-quality conditions.

- Asked participants to consider a "broad scope" of information including insights on:
  - Short-duration and long-term studies
  - Edge-of-field and watershed-scale research
  - Structural and non-structural practices
  - Crop and animal agriculture

Making Science Work For You:

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Agenda

Part I: What Have We Learned From Water-Quality Studies?

1. The Importance of Targeting Practices on the Landscape
   Zach Easton (Virginia Tech)
2. Watershed Prioritization for Rapid Gains in Habitat and Water Quality
   Scott Heidel (Pennsylvania Department of Environmental Protection)
2. Water-Quality Trends in Agricultural Watersheds Prioritized for Management
   Jimmy Webber (US Geological Survey)
3. Managing Sediment: Your Land, Your Soil
   Matt Cashman (US Geological Survey)
5. Conservation Easement Assessment Project (CEAP) Watershed Studies
   Lisa Duriancik (US Department of Agriculture - Natural Resources Conservation Service)

Discussion questions will follow Part I

Photos courtesy of Will Parson, Chesapeake Bay Program

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Agenda

Part II: What Do We Need From Future Water-Quality Studies?

1. A Perspective from Maryland
   Elizabeth Hoffman (Maryland Department of Agriculture)
2. What Does NRCS Need From Future Water-Quality Studies?
   Jayme Arthurs (Natural Resources Conservation Service)
3. Feedback from STAC: Considerations for Future Monitoring Studies
   *Gary Shenk (*US Geological Survey, Chesapeake Bay Program*)*
4. Enhancing the Chesapeake Bay Program Monitoring Networks
   Kaylyn Gootman (US Environmental Protection Agency)
5. Studying Water-Quality Responses to Conservation in Small Ag. Watersheds
   *Mark Nardi (*US Geological Survey*)*

Discussion questions will follow Part II

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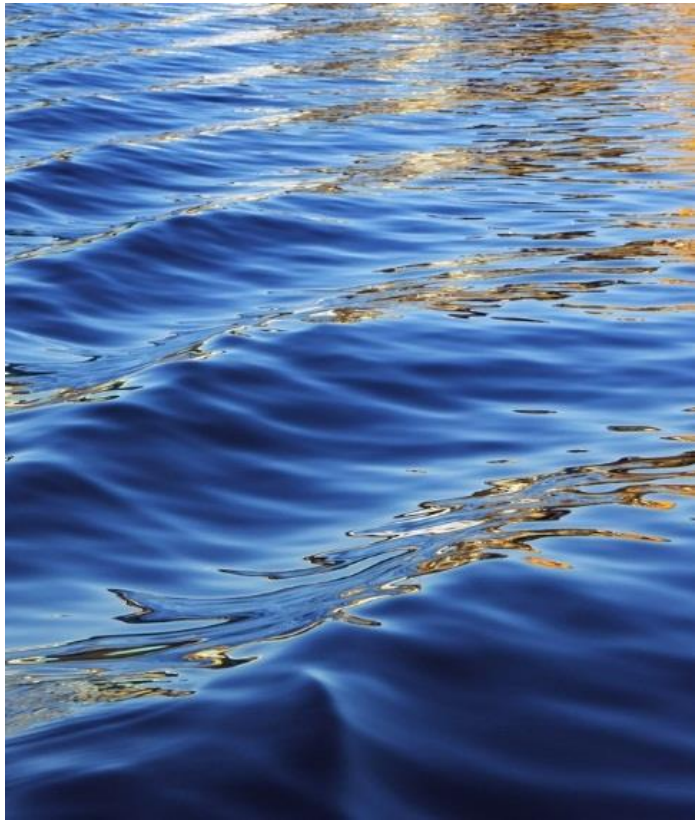
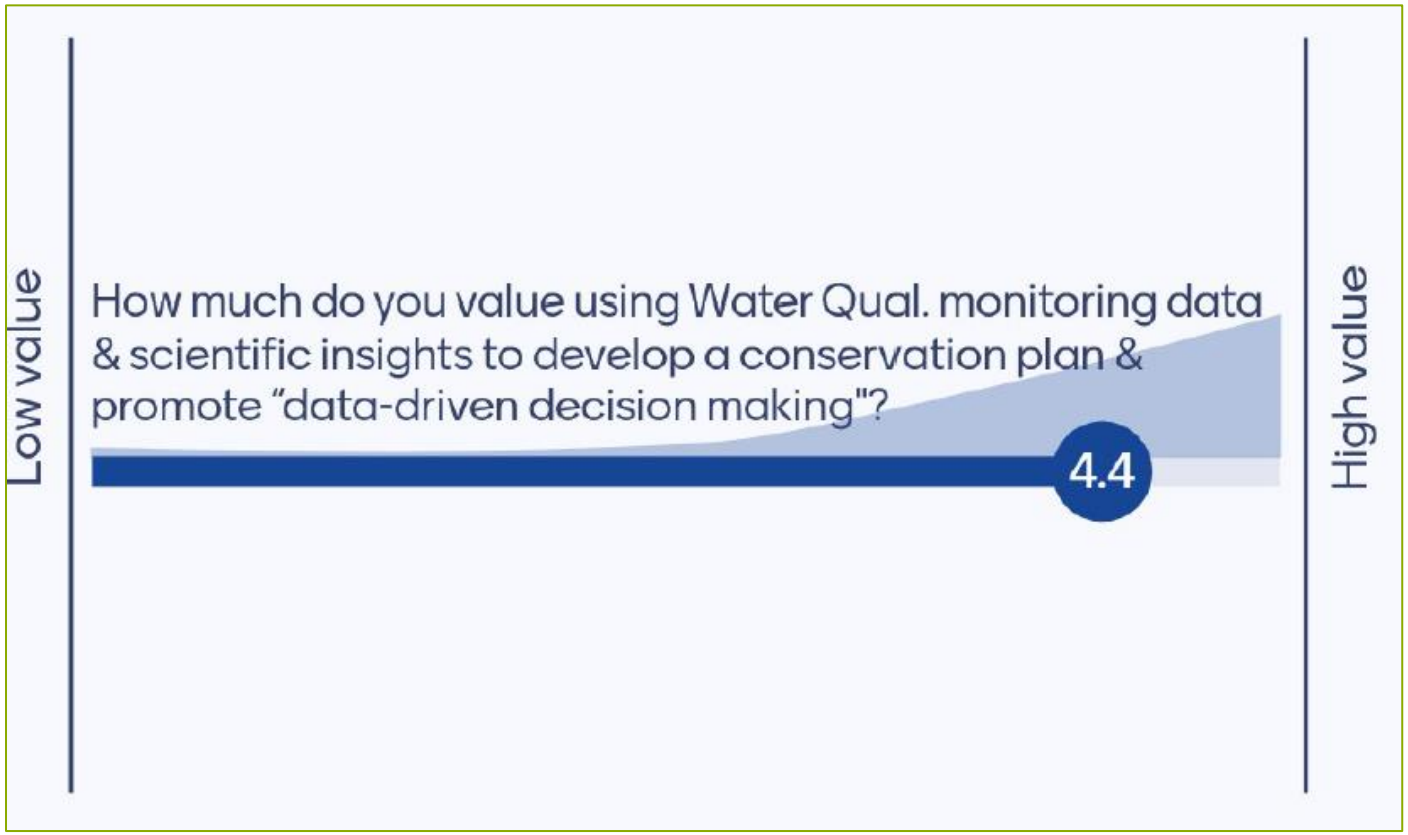
Highlighting Selected Responses to Webinar Discussion Questions



Questions and Some Take Aways

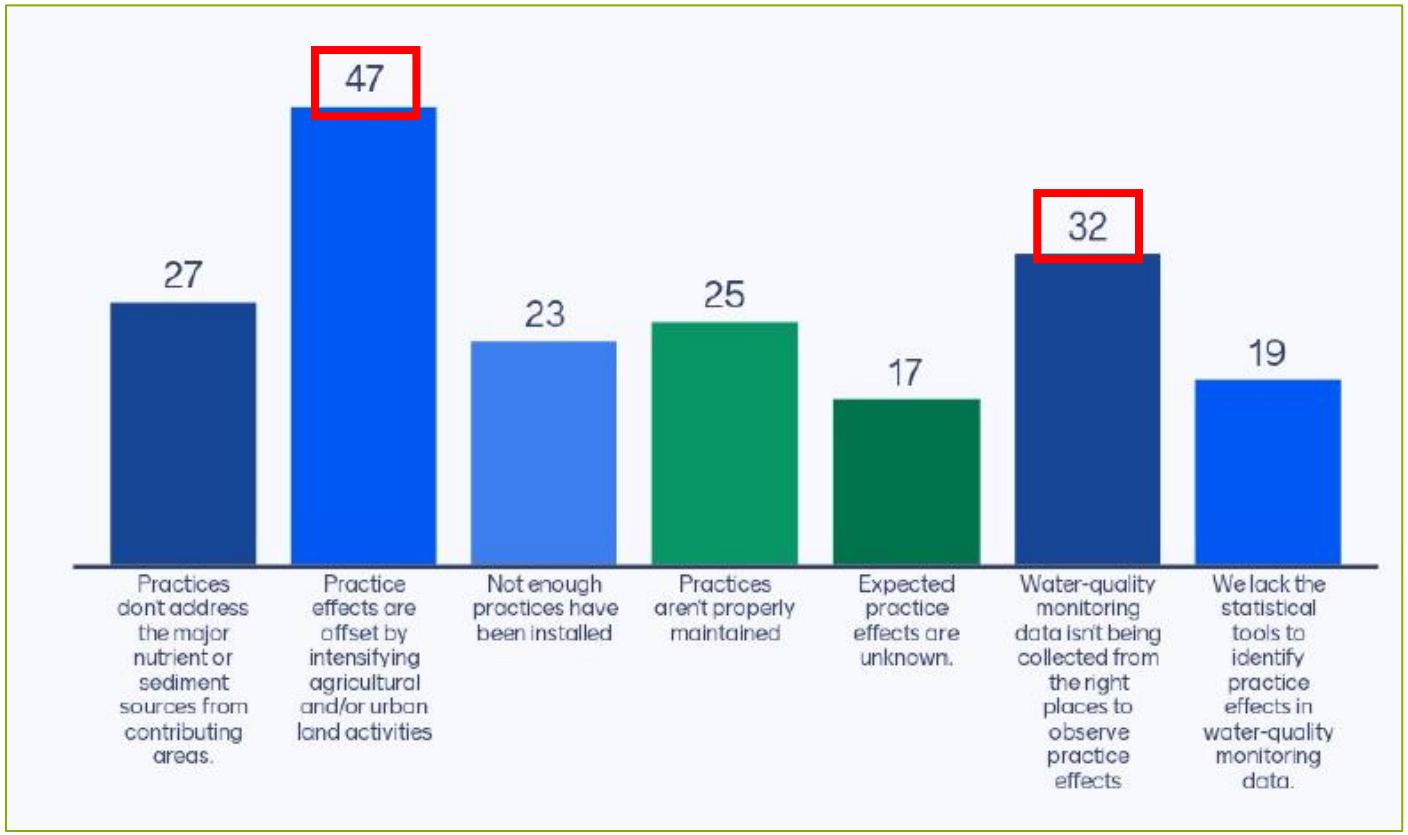


- Most respondents placed a relatively high value on these data and insights
- Our community values science to make decisions

How do you rank these considerations when developing a strategy to improve water quality and habitat?

- Targeting in high loading areas of watershed, more than specific practices, was ranked higher
- Location, location, location
- Not surprising to core planning team

Why aren't expected conservation practice effects always evident in WQ monitoring data?

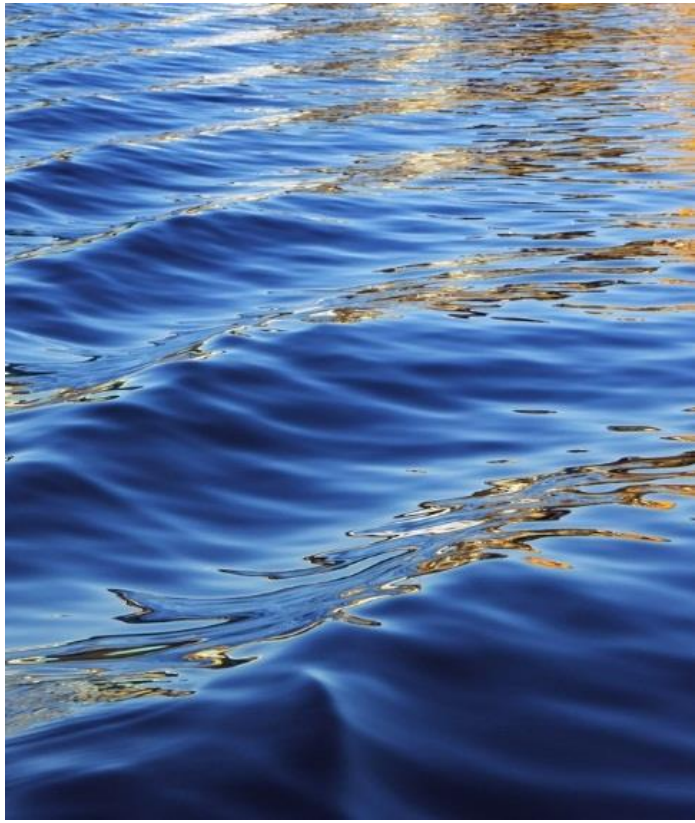


- Intensifying activities on the landscape were identified as an issue
- More than half selected that we aren't monitoring in the right places
- Possible opportunity to link monitoring and modeling

How do you recommend that the research community split their time?

- Fairly even split with slight edge to working with what we already have
- Highlights the need for continued communication of what we already know along with the need for new investments
- Does this reflect how time/financial investments are currently allocated?

Next Steps



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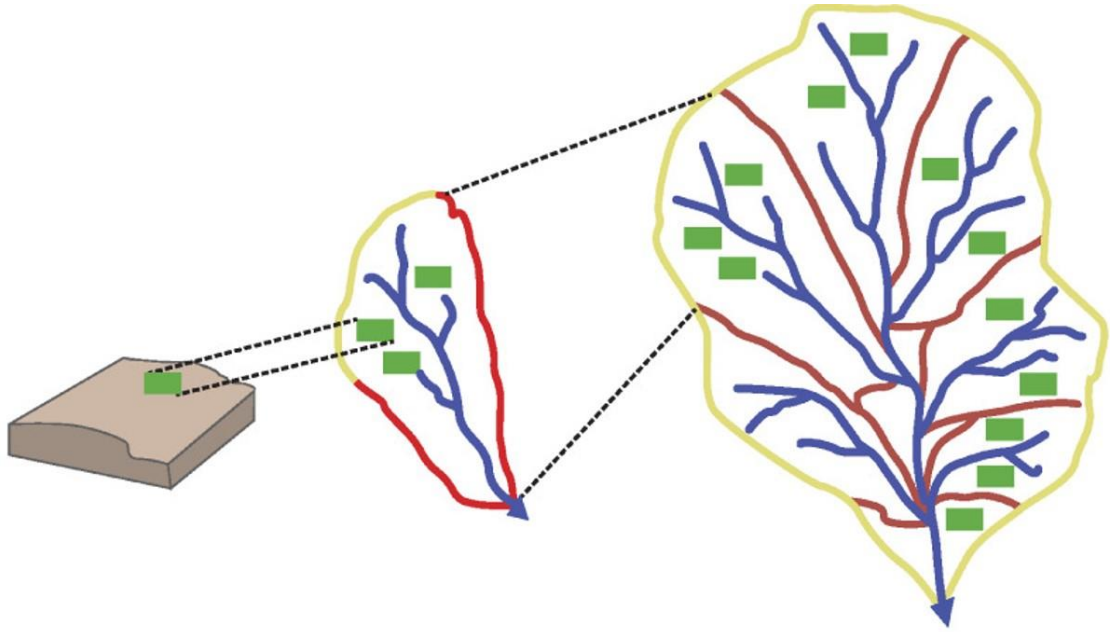

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- How do we connect monitoring-based insights to the Beyond-2025 steering committee?

Thank You!

Link to the WQGIT Submersion Series on YouTube