MAINTAIN HEALTHY WATERSHEDS GOAL IMPLEMENTATION TEAM (GIT 4)

JUNE 2025 MEETING

AGENDA

1. Land Use/Land Cover Change New Data Release

2. Beyond 2025 Update

3. Connecting with the SHWG on Defining “good stream health” under the Watershed Health Target of the Protected Lands Outcome

BEYOND 2025 UPDATE

BEYOND 2025 TIMELINE FOR THE CHESAPEAKE BAY WATERSHED AGREEMENT REVISIONS *(TENTATIVE)*

January - March:

- Outcome Assessment - Management Board decides whether to recommend consolidating, reducing, updating, removing, replacing or adding new outcome. PSC reviews agreement for additional revisions

April - June:

- Outcome Revision - Management Board recommends any new/revised outcome language. PSC approves language and Agreement revisions for public review

July - September:

- Public feedback and revisions
- Clarification of targets under each outcome

End of 2025:

- Executive Council to review recommended revisions to the Agreement and its outcomes

OVERVIEW OF MANAGEMENT BOARD AND PSC UPDATES

- At the May 7th and 8th MB Retreat, the proposed Land Use Decision Support (LUDS) outcome **received broad support,** but also feedback to make the language **more actionable** and **reflective of community needs**. In response, we made edits to the language.
    - All the draft outcomes, including our related outcomes – Stream Health and Protected Lands – also underwent the same process.
    - Proposed revisions to the Chesapeake Bay Watershed Agreement's goal statements and structure were also discussed.
- At the May 23rd PSC meeting, all the draft outcomes and revised goal statements and structure were approved for release to the **public comment period** which will occur on **July 1st – September 1st, 2025**

LAND USE DECISION SUPPORT OUTCOME UPDATES

(TO REPLACE THE LAND USE OPTIONS EVALUATION (LUOE) OUTCOME):

The edits following the MB Retreat are highlighted in red.

FINAL DRAFT OUTCOME LANGUAGE:

Develop and disseminate relevant and actionable land use information to organizations and communities involved in local and regional land use planning on past, present, and future conditions and the potential environmental and socioeconomic consequences of changing conditions.

FINAL DRAFT TARGETS:

- Continually increase the number, variety, and/or geographic scope of use cases (e.g., watershed protection, aquatic connectivity, stormwater, tree canopy, stream health, or redevelopment) for landscape information.

- Highlight two use cases annually to showcase best practices and share this information with local planning officials and partners through Story Maps and/or other communication products.

- Promote land use data and tool applications that maintain the ecological integrity of watersheds supporting good stream health and address the needs of local communities.

STREAM HEALTH OUTCOME UPDATES

FINAL DRAFT OUTCOME LANGUAGE:

- Continually improve and protect local stream health and function, including their living resources and ecosystem services throughout the watershed using the best available science to inform land management, planning, and conservation.

FINAL DRAFT TARGET:

- Improve health and ecological integrity of at least 3% of non-tidal stream miles every 6 years

The previous “under construction” Watershed Health target under the Stream Health Outcome was removed following the MB Retreat, however, the updated outcome language continues to emphasize both stream health and ecological integrity, ensuring a continued connection to our work in increasing watershed health.

PROTECTED LANDS OUTCOME UPDATES

PROTECTED LANDS OUTCOME:

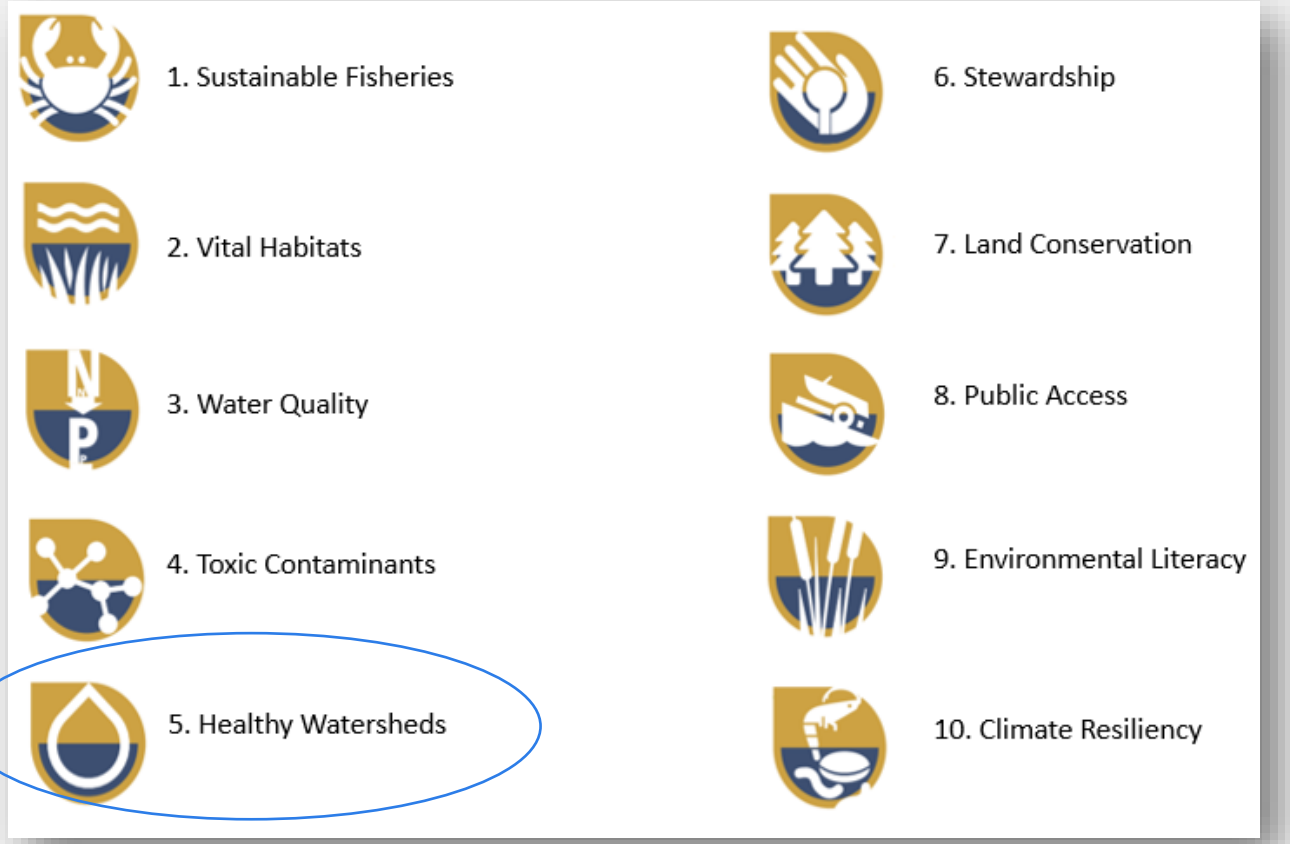
- Protect critical landscapes within the Chesapeake Bay Watershed to protect water quality, enhance biodiversity, support sustainable livelihoods, ensure military readiness and national defense, and honor cultural heritage.

WATERSHED HEALTH TARGET *:*

- Watershed Health: By 2040, protect a total of _XX_ acres of natural lands in watersheds supporting good stream health.

Changed the Watershed Health target from “Maintain the health of _XX_ % of the highest functioning sub-watersheds by targeting _XX_% of the protected lands’ outcome acreage in those areas.” Edits to the overall Protected Lands Outcome language and other targets were also edited. Final language for all the targets can be reviewed here (page 2).

BACKGROUND: CURRENT ORGANIZATION



- 31 Outcomes
- 10 Goals
- 6 GITS
- 5 Themes
  - Abundant Life
  - Clean Water
  - Conserved Lands
  - Engaged Communities
  - Climate Change

PROPOSED REORGANIZATION

4 GOALS:

1. Conserved Lands
- Land Use Decision Support
- Protected Lands
- Healthy Forests and Trees
- Adaptation to Changing Environmental Conditions

2. Clean Water
- Water Quality Standards Attainment and Monitoring
- Reducing Excess Nitrogen, Phosphorus and Sediment
- Toxic Contaminants Mitigation

3. Thriving Habitat and Wildlife
- Submerged Aquatic Vegetation
- Brook Trout
- Fish Habitat
- Wetlands
- Fish Passage
- Stream Health
- Blue Crab Sustainability; Oysters

4. Engaged Communities
- Public Access
- School District Planning
- Student Experiences; Stewardship
- Workforce
- Local Leadership

Relevant Documents:
Proposed Reorganization of the Goal Introductions and Statements (Link)
Proposed Revisions to the Vision, Preamble, and Principles (Link)

HOW DO WE SUPPORT EACH OTHER'S OUTCOMES?

Creates and communicates actionable information relevant to land use to organizations involved in the planning process.

Stream Health WG

Characterizes stream and river corridor conditions; identifies opportunities for restoration and conservation; improves stream health

Increase knowledge and awareness of local elected officials.

Characterizes risks and opportunities associated with coastal resilience.

Shares information among local officials and between local officials and CBP Partners

Reforests riparian areas, promotes increased tree canopy, and preservation and management of forested lands.

Promotes and incentivizes land conservation efforts

Internal to "Lands" goal

External but necessary for success of "Lands" goal and Watershed Health

NEXT STEPS

- **Quantify targets under the protected lands and land use outcomes**
- **Participate in CBP restructuring decisions surrounding the "Conserved Lands" goal.**
- **Review and respond to public comments following review period: July 1st – September 1st, 2025.**

CONNECTING WITH THE SHWG ON DEFINING "GOOD STREAM HEALTH"

WHAT IS "GOOD STREAM HEALTH"

Land Use Decision Support Target: promote land use data and tool applications that maintain the ecological integrity of watersheds supporting good stream health and address the needs of local communities.

Protected Lands Target: By 2040, protect a total of _XX_ acres of natural lands in watersheds supporting good stream health.

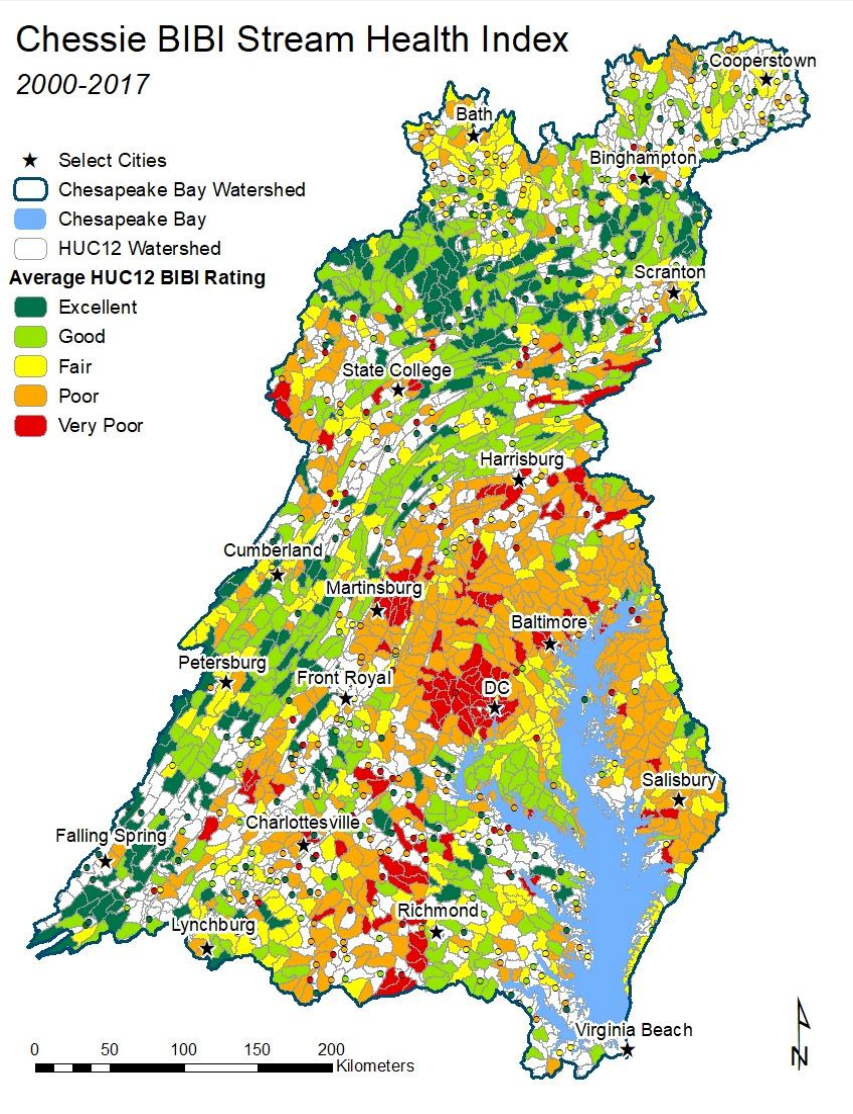
CHESSIE BIBI: CHESAPEAKE BENTHIC INDEX OF BIOTIC INTEGRITY

Focused on small streams

Field assessed benthic macroinvertebrate condition with similar methods.

Assessed by HUC12 using a minimum of 3 sampled reaches over five years.

Assessment periods: 2000-2005, 2006-2011, 2012-2017

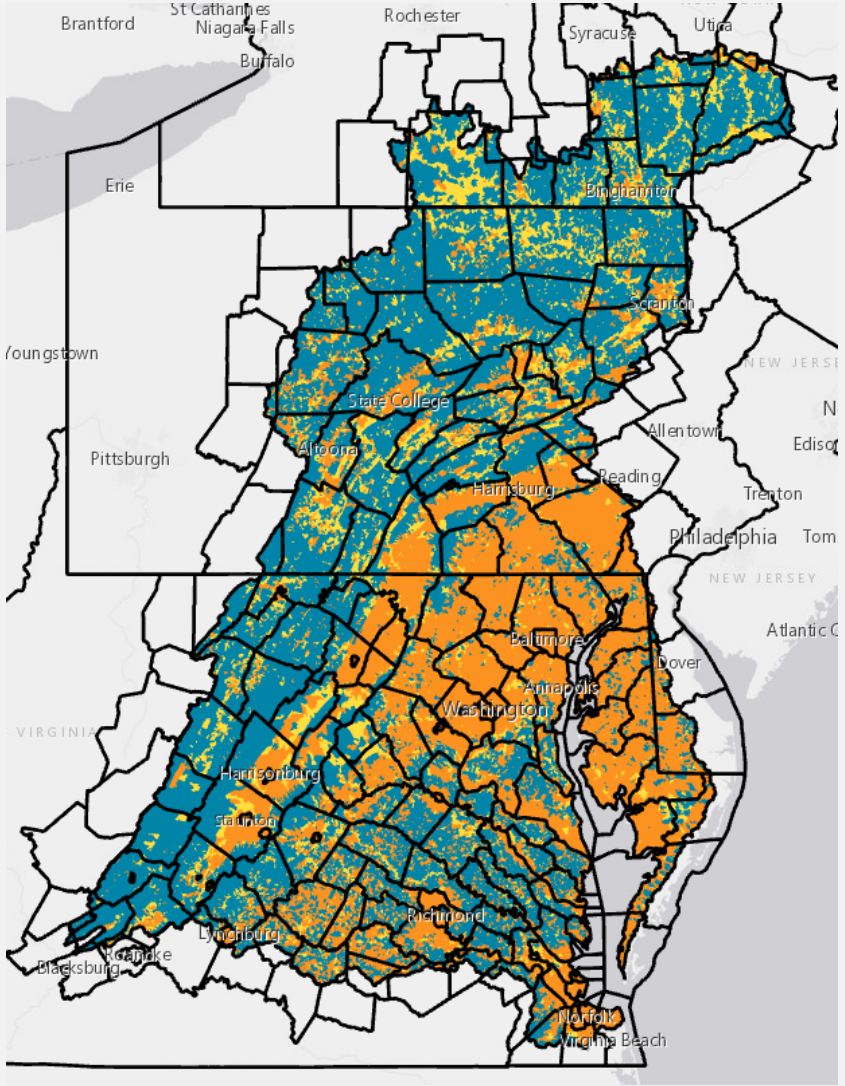


CHWA 2.0
CHESAPEAKE HEALTHY WATERSHEDS ASSESSMENT

Predicted BIBI categorical rating (excellent/good, fair, poor/very poor since 2010) at the NHD catchment scale using random forests model and 60 variables.

Single assessment period: 2017/18, same as high-resolution land use data.

Predictions mostly represent watershed conditions vs localized NHD conditions.

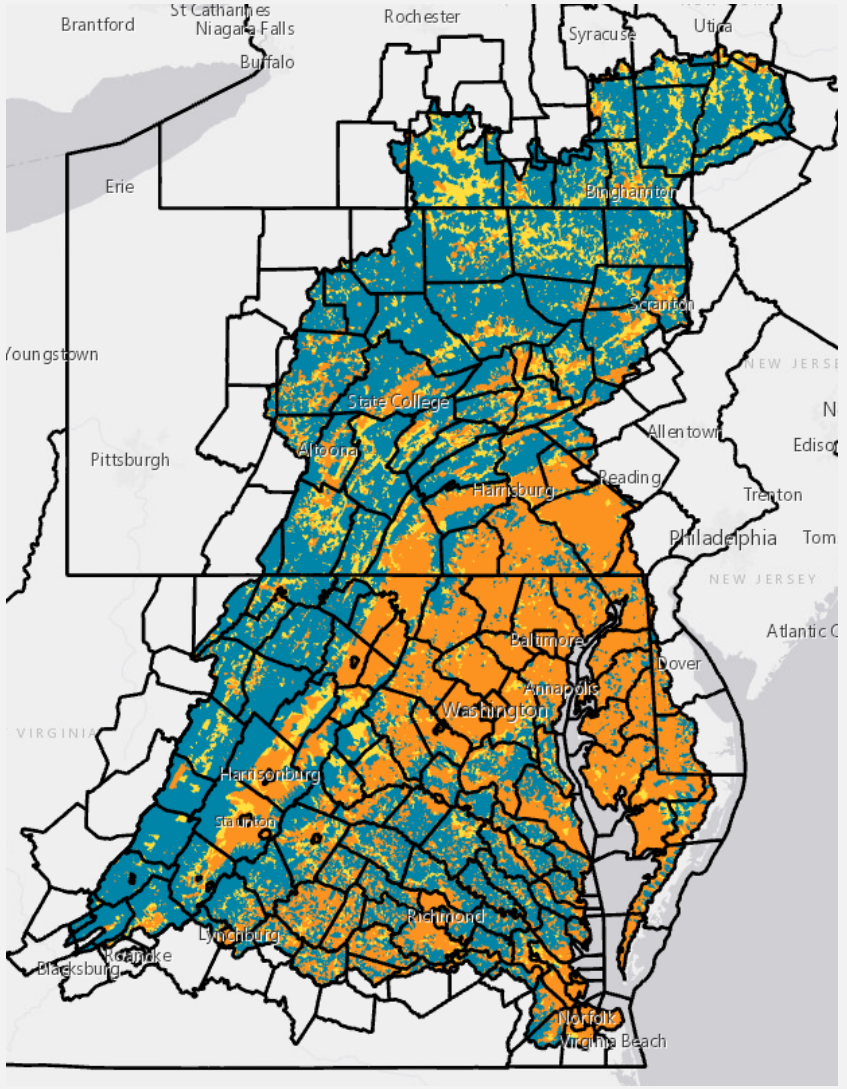


CHWA 2.0
CHESAPEAKE HEALTHY WATERSHEDS ASSESSMENT

Watershed metrics

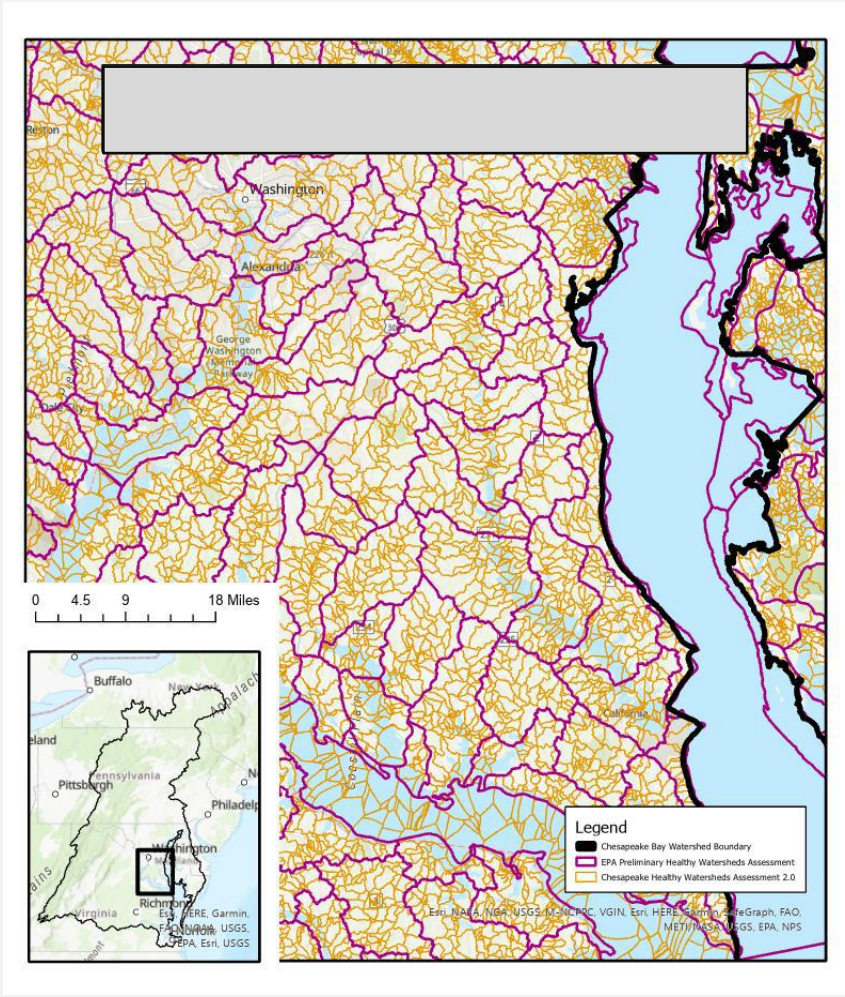
Top Ten Predictive Metrics (importance score)

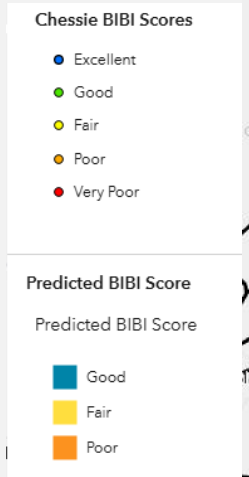
1. % Tree Canopy with unmanaged understory in watershed
2. % Natural Land in Riparian Zone in watershed
3. % Impervious Cover in watershed
4. Housing Unit Density (2020) in watershed
5. Road Density in watershed
6. Population Density in watershed
7. % Tree Canopy with managed understory in watershed
8. Streambed D50 (Noe et al. 2020)
9. Streambed fine sediment and sand cover (Noe et al. 2020)
10. % Tree Canopy with unmanaged understory in catchment

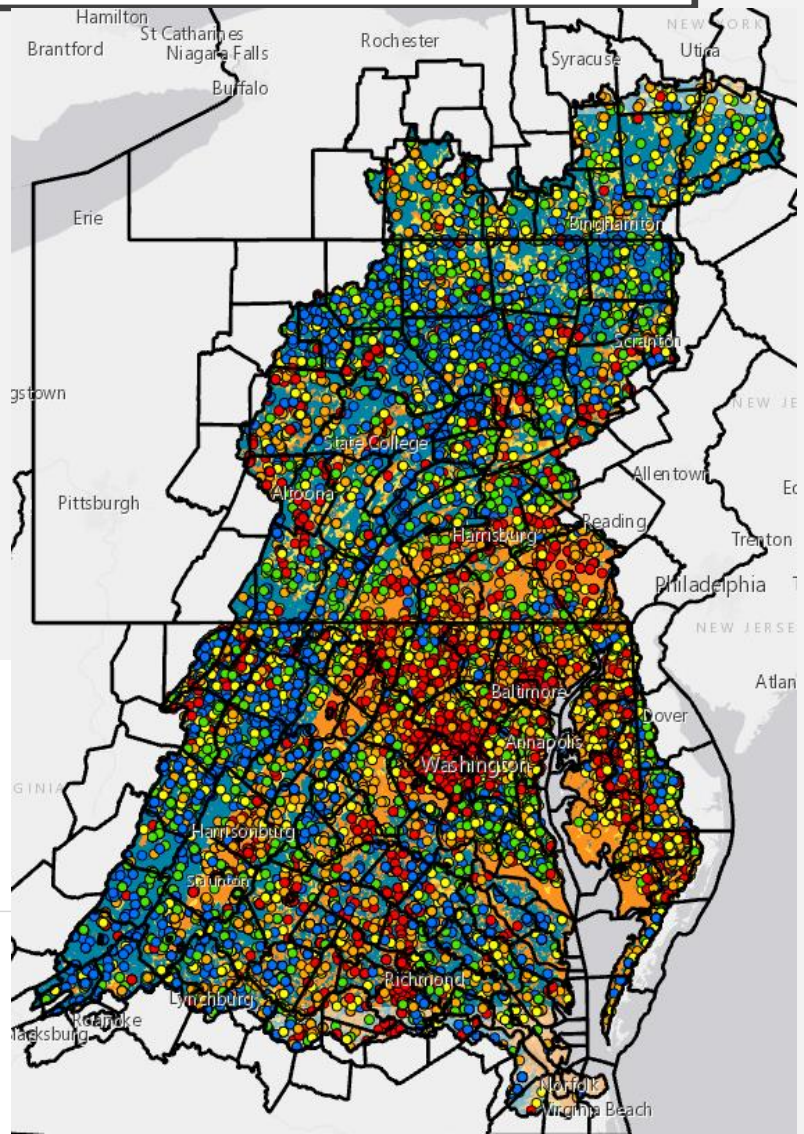


CHESSIE BIBI AND CHWA 2.0

Different spatial scales: HUC12's (1,983) vs. NHD Catchments (83,628)







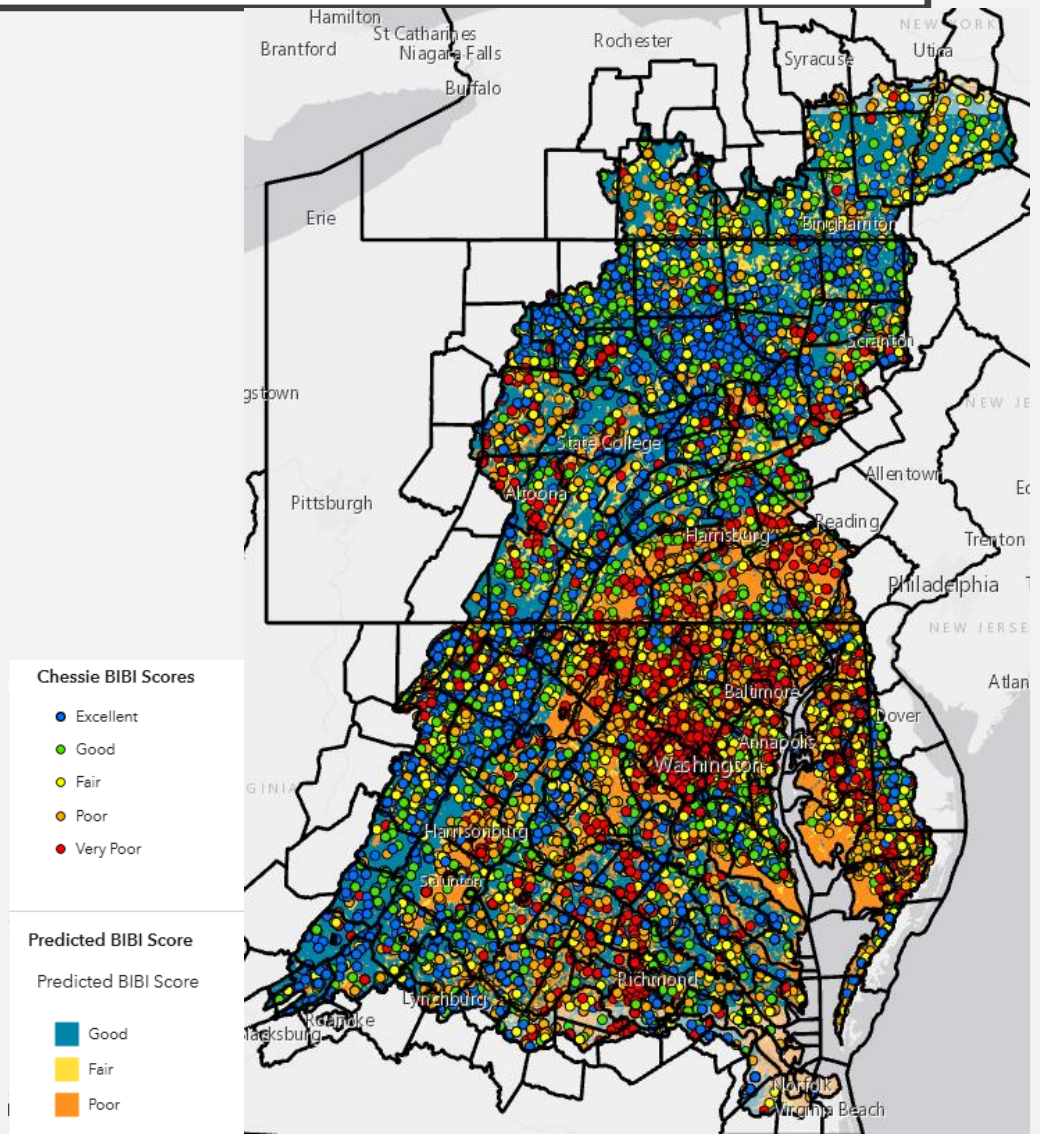
CHESSIE BIBI AND CHWA 2.0

General spatial agreement between predicted good and poor stream conditions.

Predicted (CHWA 2.0)

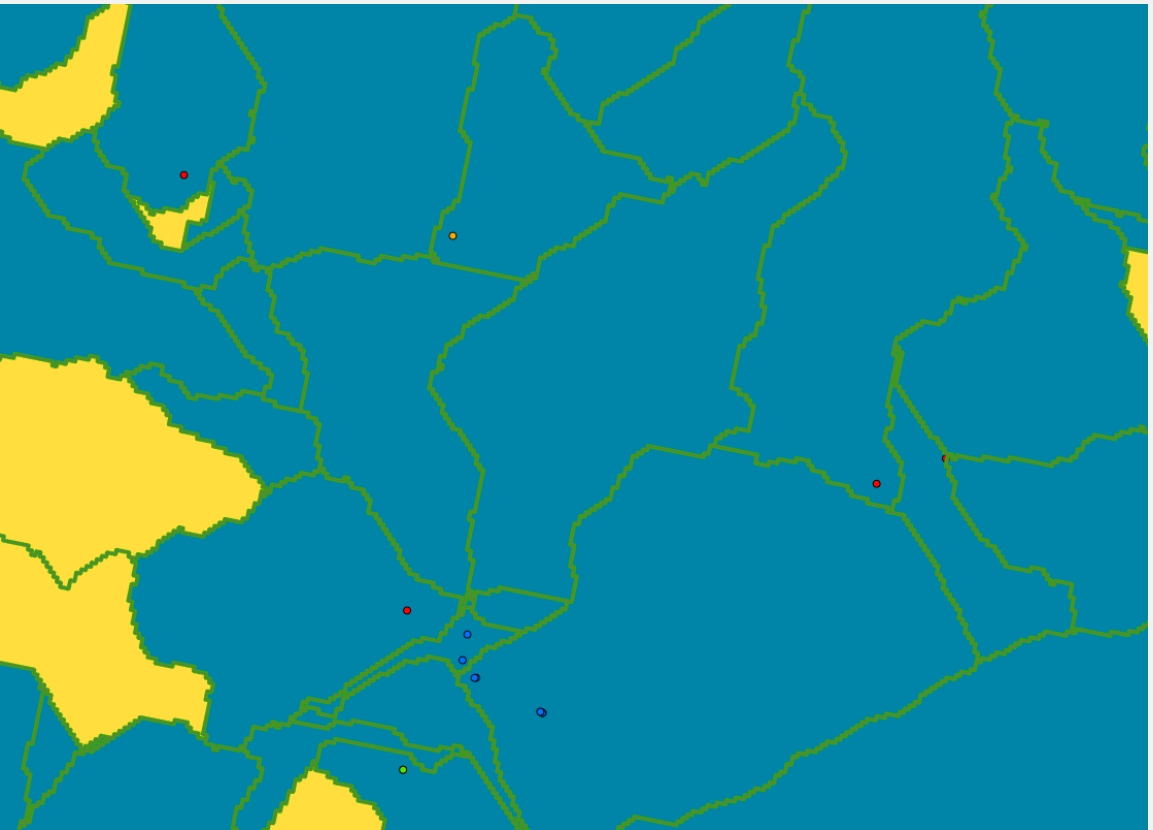
Measured (Chessie BIBI)

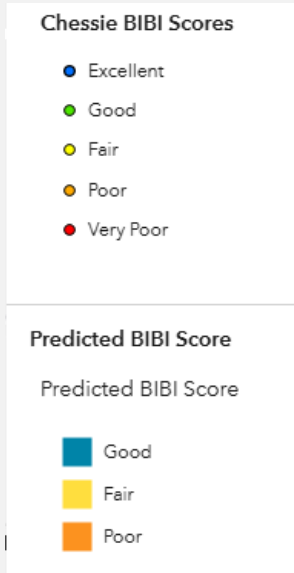
	Good	Fair	Poor	Total
Good	77%	10%	14%	103
Fair	43%	26%	31%	84
Poor	21%	9%	70%	87
Total	133	40	101	274



AGREEMENT BETWEEN CHESSIE BIBI AND CHWA 2.0

General spatial agreement between predicted conditions and monitored conditions.





AGREEMENT BETWEEN CHESSIE BIBI AND CHWA 2.0

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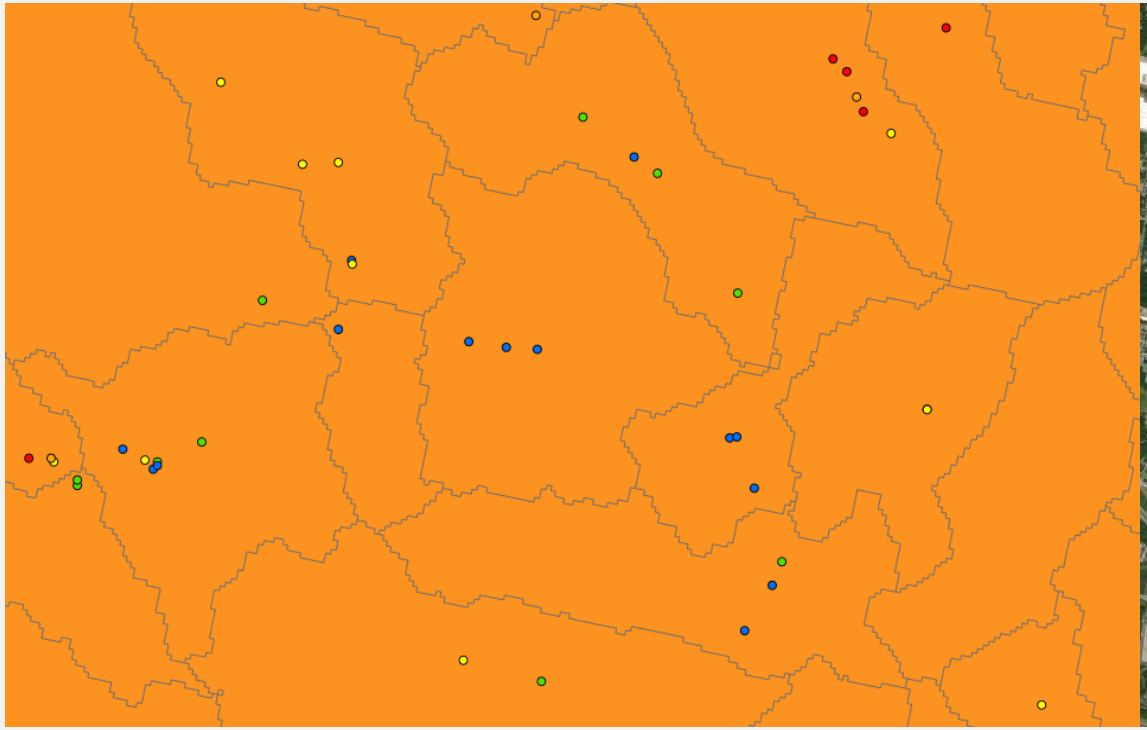
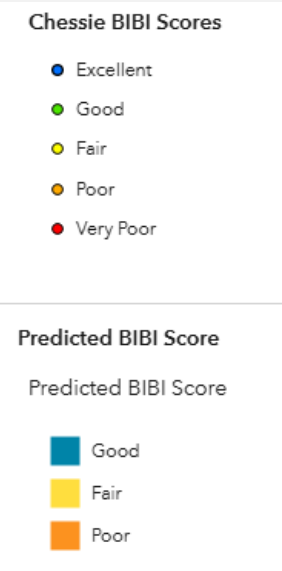
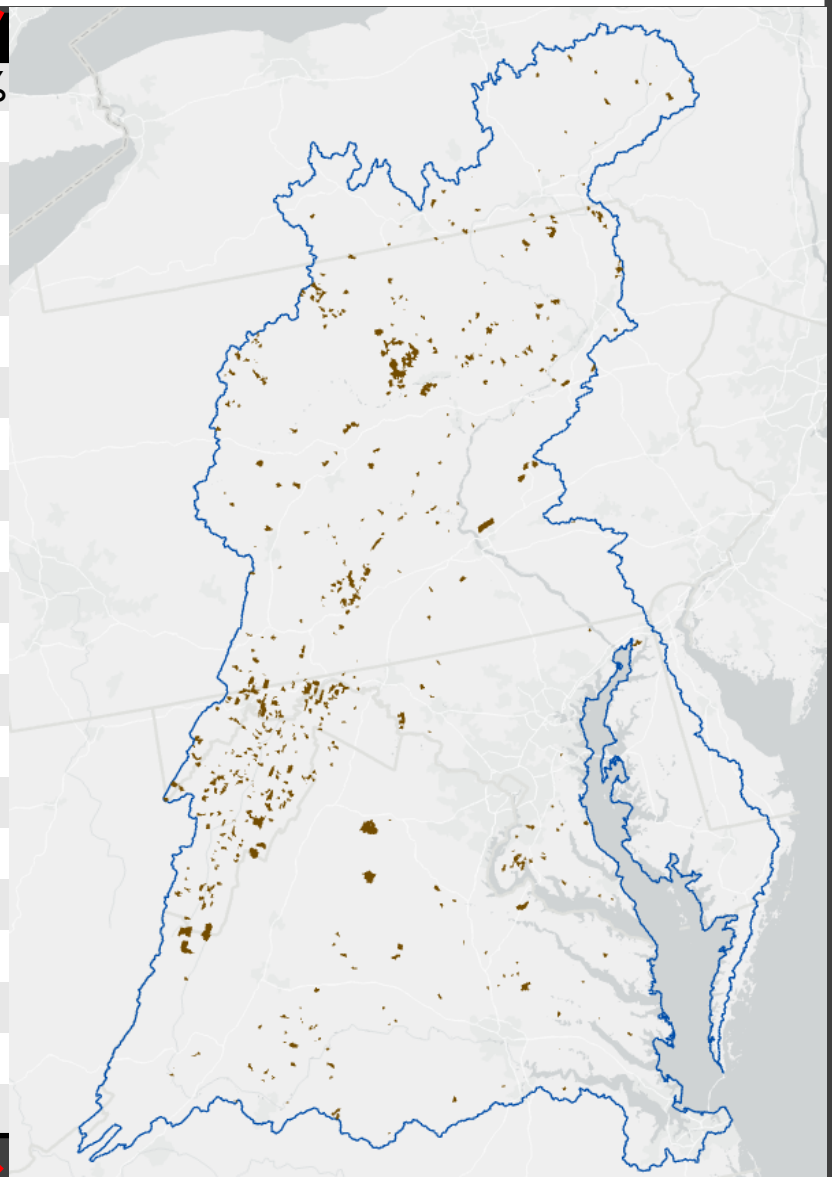




CHESSIE BIBI AND CHWA 2.0

Criteria	Count	%
None	83,628	100.0%
Predicted BIBI = good	36,858	44.1%
Predicted BIBI = good AND intersects ChessieBIBI = good/excellent	2,966	3.5%
Predicted BIBI = good AND <70% protected in watershed AND >70% tree canopy in watershed AND intersects ChessieBIBI = good/excellent	1,333	1.6%
Predicted BIBI = good AND <25% protected in watershed AND >70% tree canopy in watershed AND intersects ChessieBIBI = good/excellent	686	0.8%
Predicted BIBI = good AND 0% protected in watershed AND >70% tree canopy in watershed AND intersects ChessieBIBI = good/excellent	213	0.3%



WHAT OTHER DATA SHOULD BE CONSIDERED?

EPA's ATTAINS database

Pros: information on various sources of impairment- geomorphology, nutrients, pH

Cons: source identification and sample attribution to reaches is not consistent across jurisdictions.

Fanelli, Rosemary M., Matthew J. Cashman, and Aaron J. Porter. "Identifying key stressors driving biological impairment in freshwater streams in the Chesapeake Bay Watershed, USA." *Environmental management* 70, no. 6 (2022): 926-949.

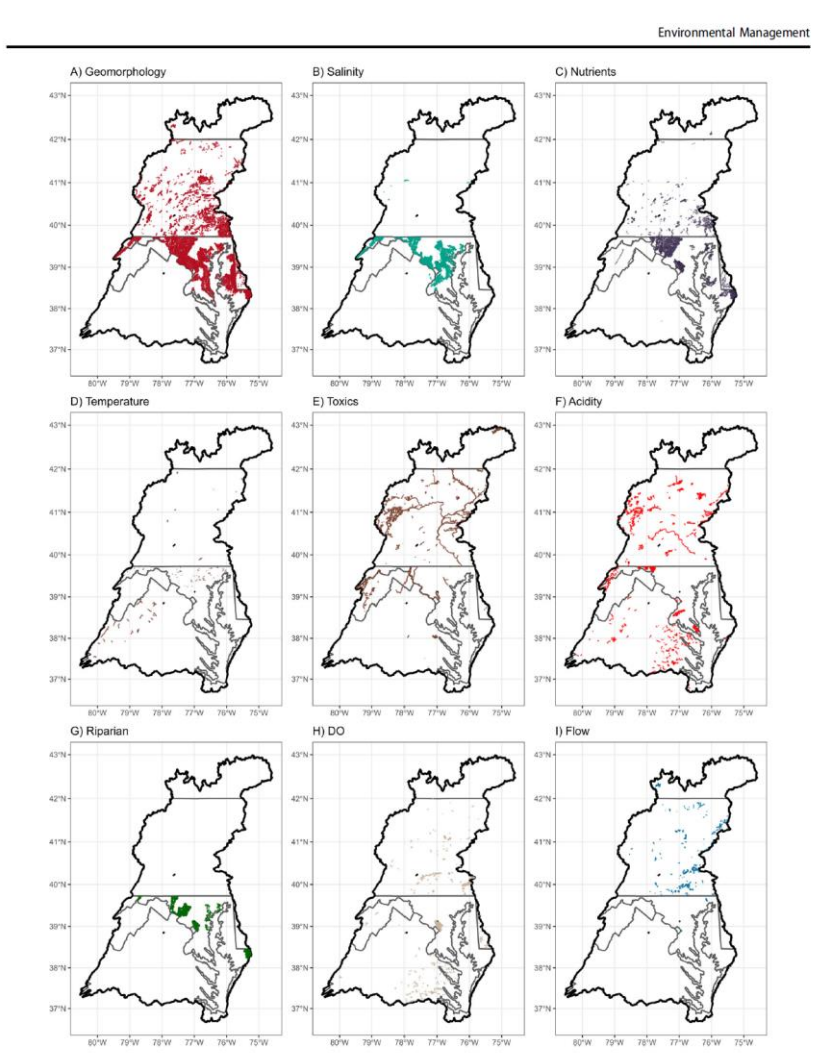
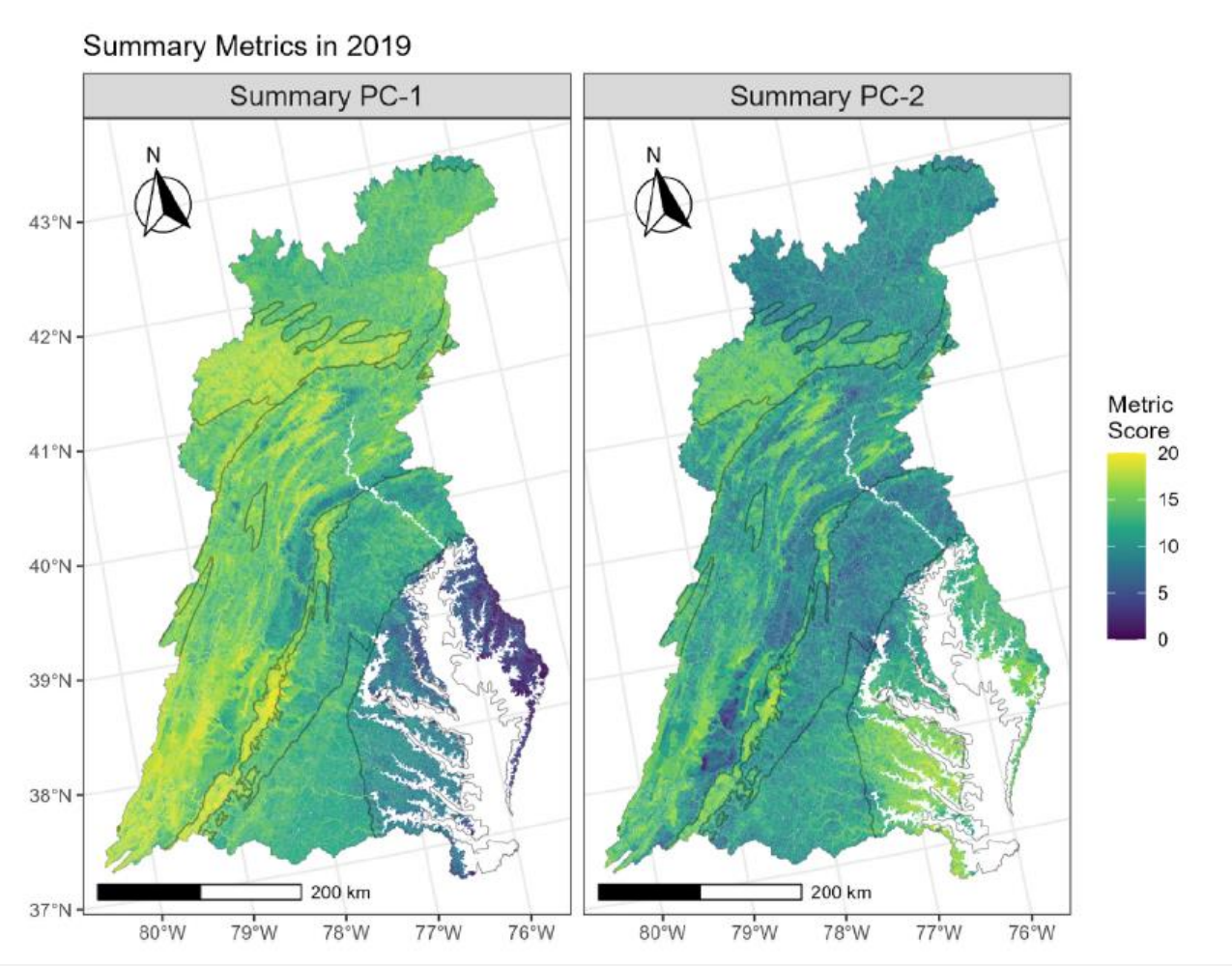


Fig. 6 Spatial distribution of jurisdiction-reported impairments caused by the nine major stressor categories. From left to right: (top row) geomorphology, salinity, nutrients; (middle row) temperature, toxics, acidity; (bottom row) riparian condition, dissolved oxygen, flow

WHAT OTHER DATA SHOULD BE CONSIDERED?

Consistently compiled regional data

- Physical habitat, streambank erosion, salinity, stream temperature, hydromorphology



Cashman, Matthew J., Gina Lee, Leah E. Staub, Michelle P. Katoski, and Kelly O. Maloney. "Physical habitat is more than a sediment issue: A multi-dimensional habitat assessment indicates new approaches for river management." *Journal of Environmental Management* 371 (2024): 123139.

NEXT STEPS ???