Where are we with Fish Habitat?

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Outline

- Fish Habitat Workshop Results and Recommendations
- Next Steps
  - Management Strategy Update
- GIT Funding Project and Process
  - Timeline
- Other Assessments

Workshop Goals

1) Examine existing habitat assessment tools at the regional and national level,
2) Determine criteria for the selection and ranking of habitat condition and stressor variables,
3) Prioritize which of these variables have the greatest influence on habitat condition and vulnerability,
4) Identify research gaps and priorities, and
5) Recommend a framework for developing such an assessment.





Workshop Results

Pre-Workshop Questionnaire confirmed that there exists strong interest among Chesapeake Bay watershed stakeholders for developing a fish habitat assessment.

- 70% indicated that they would use a regional habitat assessment to prioritize potential sites for restoration/conservation.
- But there are many existing spatial tools! Additional responses indicated it would need to complement their current process or tools.

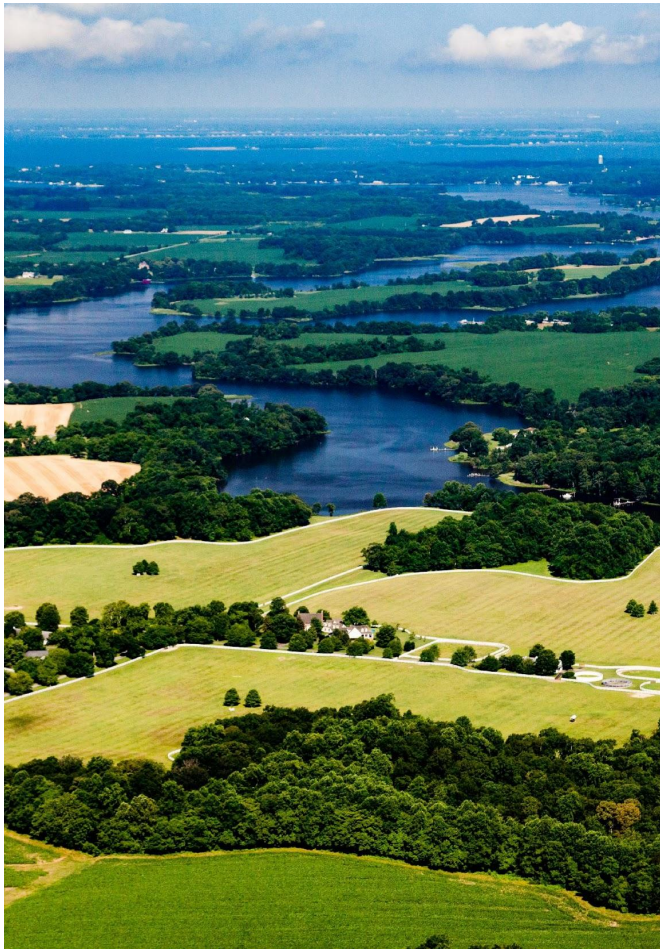
Workshop Results
Identify the Variables Most Influencing Habitat

From the list of 441 variables:

- **87** variables were identified from the combined habitat groups as likely to have a significant impact on fish habitat in the Chesapeake Bay watershed (determined as a severity and certainty score of 6).
- **54** unique variables identified as having a significant impact on fish habitat.

Habitat Type	Total Number of Selected Variables	Number of Unique Variables Identified with High Severity and Certainty
Headwaters	23*	7*
Large Nontidal Rivers	108	15
Tidal Freshwater	83	31
Tidal Saltwater	66	34

Workshop Results and Recommendations



Develop Pilot Assessment- Continue gathering data sets on key stressors along with biological data and evaluating the scale of applicability.
Select pilot areas and test various biological response metrics to determine which measures are most sensitive to stressors and to validate approach and utility.

Incorporate Adaptability- an assessment should be built in a way that can incorporate additional stressors as science evolves.

Results and Recommendations

Develop the Assessment at the finest scale possible- A fine spatial scale (1:24,000 or finer) is recommended for planning, management, restoration, or mitigation of fish habitats.

Outreach and training to assessment users- Develop a communication framework. Design outreach and training modules accommodating diverse users interested in applying a regional fish habitat assessment tool to ensure that its content meets user needs.

Results and Recommendations

Prioritize Research Needs- Identified numerous research needs. All groups suggested researching stressors that were ranked as low certainty and expected high severity.

Conduct data mining exercise to fill data gaps- Datasets were identified, but data were lacking for some habitat types. Additional data needs are listed under each habitat type. Where data gaps persist, research should be prioritized.

Next Steps

- Management Board approval of the report ☺
- Incorporate recommendations and the new stressor information into Version 2 of the Fish Habitat Management Strategy

Updates to Management Strategy

Participating Partners and Key Participants list to reflect active participants. Active is considered someone that has participated in the last 18 months. Added Queen Anne County local Government.

Factors Influencing Success section by removing the stressor table and including the Factors Influencing listed in workplan (ie. Scientific Understanding, Partner Coordination).

Current Efforts and Gaps section to reflect current understanding, including:

- Decision support tool recommendation and a list of research needs that were developed at the Fish Habitat Workshop.
- Management beyond addressing water quality and single species fisheries management.
- Metrics for fish habitat conservation and restoration.
- Improved communication with the public and decision makers, and improved partner coordination.

Under ***Management Approaches*** section, the table listing stressors from the 2018 STAC workshop was inserted.

Updates to Management Strategy

Habitat Type: Large Nontidal Rivers	
Representative Species: Freshwater Mussels, Black bass, American Shad, American Eel, River Herring	
Variable/stressors	***Factor***
Stormwater runoff, Impervious surface	Human/Urban
Sediment	Urban/ Pollution/ Agriculture
Nutrients / Eutrophication	Agriculture/ Nutrient
Deforestation	Natural
Bank erosion	Habitat
Flow alteration	Dams
Habitat fragmentation, Deforestation, Population density, Housing density	Human

Habitat Type: Headwaters	
Representative Species: Brook Trout, trout (general)	
Variable/Stressors	***Factor***
Sediment, Water temperature, Point source discharge	Pollution
Number, position, and size of dam, Reservoir releases, Culverts, Thermal change from	Dams
Population and housing density, Septic system density and age, Population growth, Commercial employment density, Land use, Waste water treatment plant, Fishing	Human
Land Use, Land Use Change, Imperviousness, Stream Canopy Cover, Channelization, Roadways/Road Density, Road Crossings, Stormwater Management, Sedimentation, Coal	Urban
Sedimentation, Manure management, Nutrients, Land and streambank erosion, Ditching, Lack of riparian buffers, Temperature effects, Agrichemicals (pesticides, EDCs, hormones)	Agriculture
Wetland loss, Riparian buffers, Sediment erosion, Channel scour and fill	Habitat

Next Steps

- A post-workshop project proposal was selected for Chesapeake Bay Program GIT funding. Funds will be used to secure a contractor for one year to continue building on the STAC workshop data inventory with biological data and analysis of the data for use in the pilot assessments, and potential regional assessment.

- Collaboration with NOAA and USGS partners will continue with this project!!!!

Regional Fish Habitat Assessment Project

Project Advisory Committee-

- Steve Faulkner (USGS)
- Bruce Vogt (NOAA, Fish GIT Coordinator)
- Suzanne Skelley (NOAA, Director Oxford Cooperative Lab)
- A.K. Leight (NOAA)
- Gina Hunt (MD. DNR, Fish Habitat Team Coordinator)

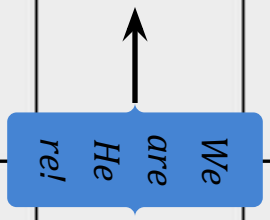
Additional folks added for information sharing at certain meetings. (ie. Scott Phillips (USGS), ACFHP, MAFMC).

Meeting every 2-3 weeks till conceptual model and assessment pathway are complete.

Fish Habitat Action Team will serve in non-technical oversight role; coordination with user-needs. Review team membership & roles.

Project Timeline

Calendar Year	2018				
	Jan-Mar	Apr-June	July-Sept	Oct-Dec	Jan-Mar
Partners Collaborative Work to Precede Award	Data inventory of 441 stressor variables influencing fish habitat compiled for Workshop	Conduct Fish Habitat Workshop to identify the necessary information and analytical approaches for fish habitat assessment.	Development of GIT funding proposal to complete data inventory	Workshop Report Completed and Approved Brief Fish and Habitat GITs Develop Preliminary conceptual model/pathway to CB Assessment for all 4 habitat types	
Work of Contractor					
Collaborative Team Work					



Project timeline illustrates a systematic approach to a regional fish habitat assessment and contribution of GIT funding.

Look for communication (outreach to assessment users) and coordination opportunities.

Project Timeline

Calendar Year	2019			2020				2021	
	Apr-June	July-Sept	Oct-Dec	Jan-Mar	Apr-June	Jul-Sept	Oct- Dec		
Partners Collaborative Work to Provide Award									
Work of Contractor	Contractor working to discover and assess biological data and remaining environmental data for tidal waters.		Metadata Analysis						
			Seek feedback on database and metadata results		Work to inform discussion of Pilot Assessments				
Collaborative Team Work	Continue to engage with GITs, assess needs of stakeholders, Advisory committee, and collaborate and evaluate approach of upcoming assessments (N.E Regional Assessment)								
				Develop recommendations for conducting assessments and select pilot assessment areas.					
					Conduct Pilot Assessments				
							Seek funding and expand partnership to conduct watershed fish habitat assessment		

Coordination with other Fish Habitat Assessments

National Assessment

Next update will be in 2020

See how they may refine the assessment methods and datasets.

Southeast Regional Assessment (NC to FL)

Complete, but not yet publicly available (Nov.)

Did not include biological data (insufficient)

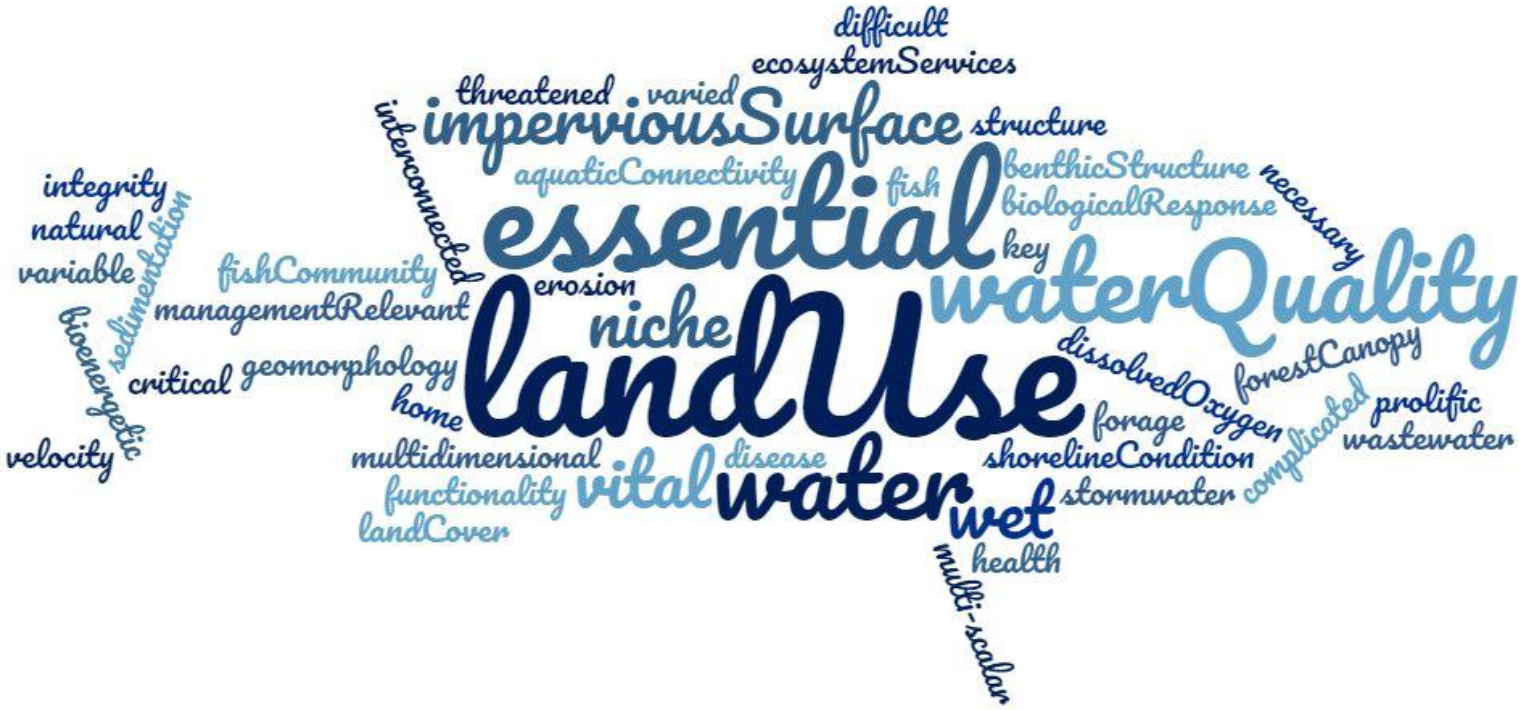
Two goals (restoration and conservation)

Northeast Assessment

Not looking at stressors; looking at habitat trends.

Currently developing workplan

Questions


difficult
ecosystemServices
threatened
varied
imperviousSurface
structure
interconnected
aquaticConnectivity
fish
benthicStructure
necessary
biologicalResponse
integrity
natural
variable
sedimentation
essential
key
waterQuality
fishCommunity
erosion
managementRelevant
niche
landUse
dissolvedOxygen
forestCanopy
bioenergetic
critical
geomorphology
home
forage
prolific
complicated
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