Quarterly Progress Meeting - May 2017

Chesapeake Bay Program
Science. Restoration Partnership.

Sustainable Fisheries GIT: Fish Habitat

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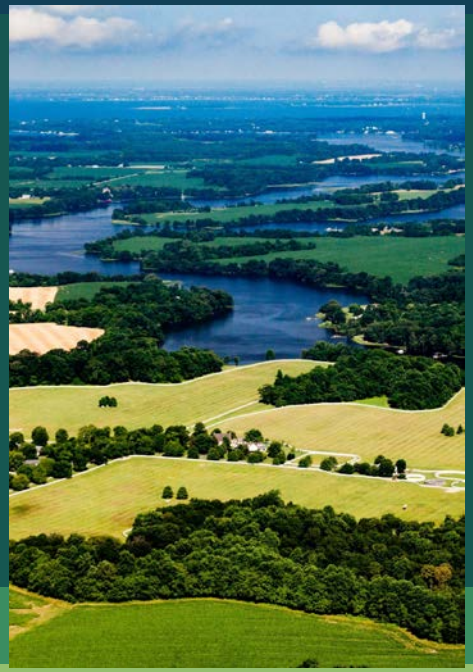
Through the Chesapeake Bay Watershed Agreement*, the Chesapeake Bay Program has committed to…*

Goal: *Sustainable Fisheries*



Outcome: *Fish Habitat*

Continually improve effectiveness of fish habitat conservation and restoration efforts by identifying and characterizing critical spawning, nursery and forage areas within the Bay and tributaries for important fish and shellfish, and use existing and new tools to integrate information and conduct assessments to inform restoration and conservation efforts.

Fish Habitat Definition:

Any area on which an aquatic organism depends, directly or indirectly, to carry out the life processes of the organism, including, an area for spawning, incubation, nursery, rearing, growth to maturity, food supply, or migration

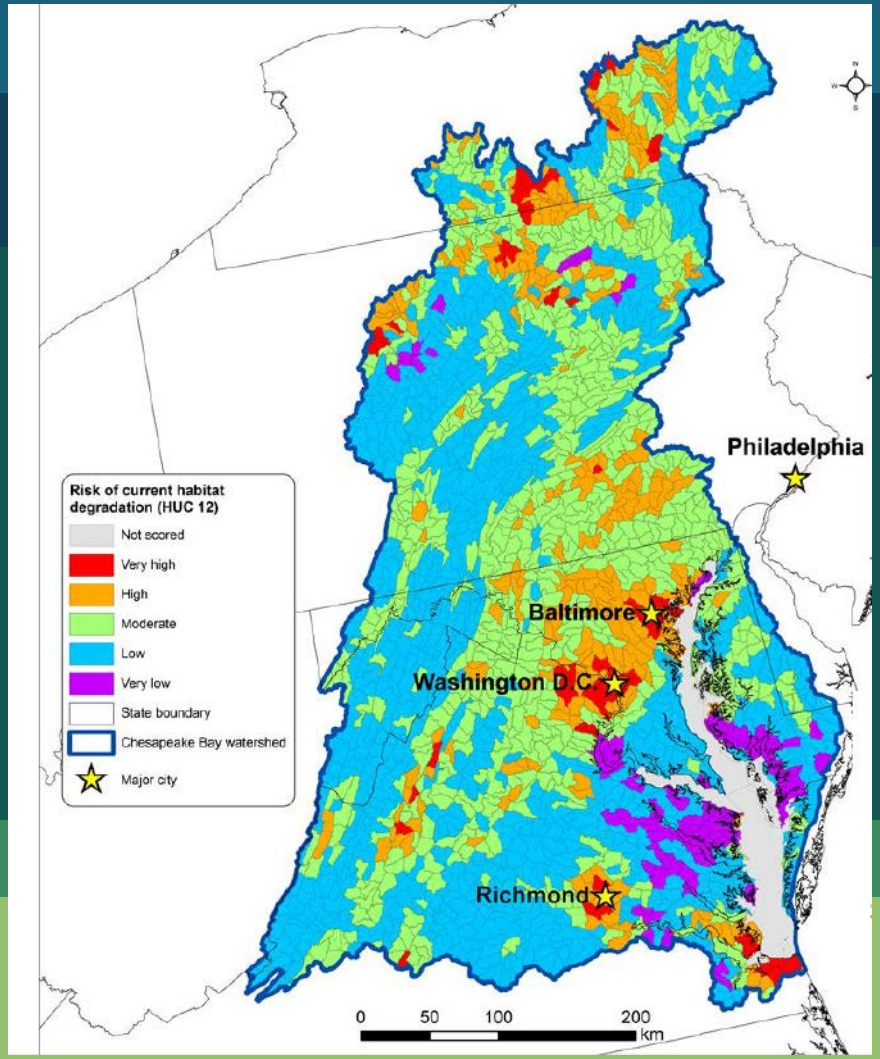
- National Fish Habitat Action Plan

Fish Habitat Map:

Most limiting disturbances for Chesapeake Bay habitats:

- Urbanization (impervious surface)
- Agriculture
- Mining
- Nutrients

- *National Fish Habitat Partnership*



What We Want

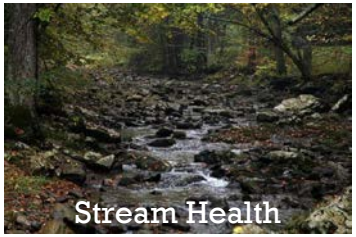
We want to drive fish habitat restoration and conservation efforts into local planning.

1

Setting the Stage:

What are our assumptions?

Fish Habitat is the center of the universe!



Fish Habitat

Logic Behind Our Outcome

Following the Decision Framework:

Factors	Current Efforts and Gaps	Management Approaches
• Scientific/Technical Understanding • Government Engagement • Public Engagement	• Understanding of habitat stressors to habitat function • Agency coordination • Lack of public engagement	• Use priority species to evaluate habitat function • Communicate agency advancements in understanding • Improve communications with partners and local community

2

Progress:

Are we doing what we said we would do?

What is our progress?

Identified fish habitat threats and stressors among selected species

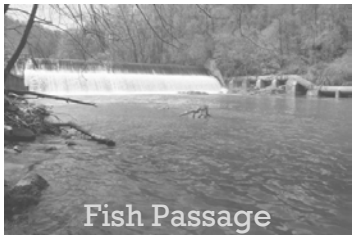
Synthesized results from a multiyear shoreline and land use impact study

Identifying critical spawning, nursery and overwintering areas for select species

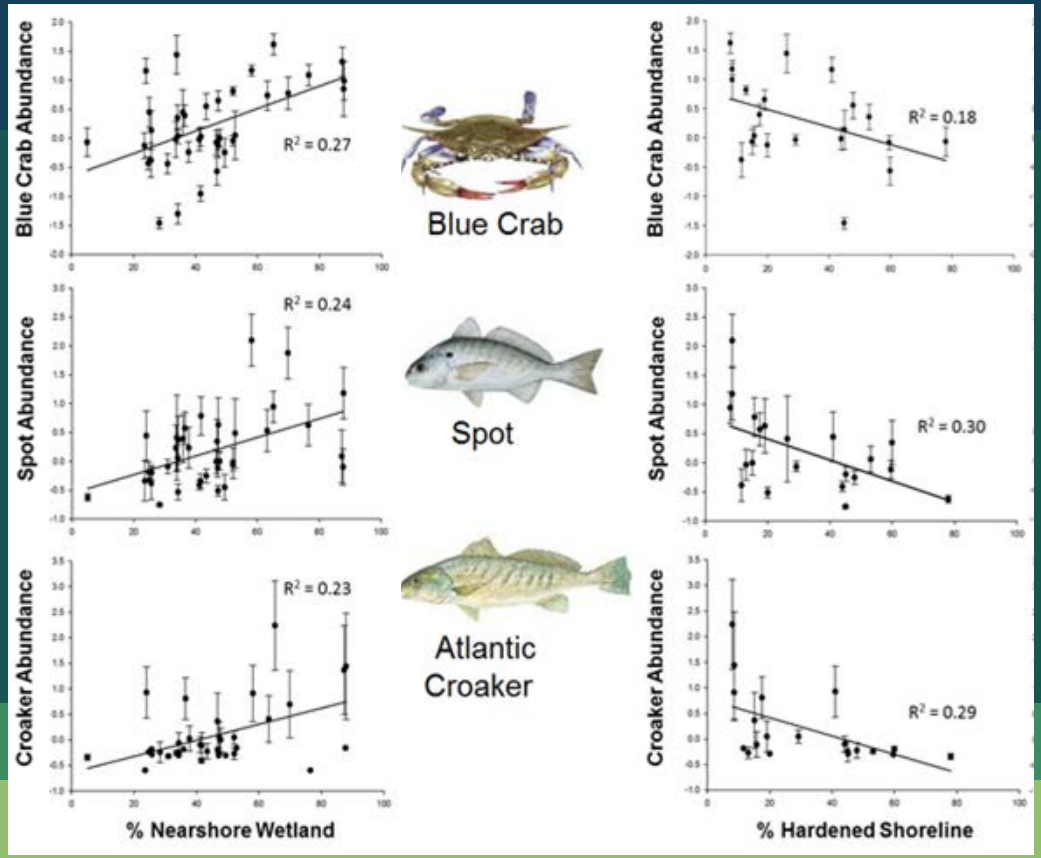
STAC funded a workshop which will identify representative species and evaluate factors influencing habitat function

Analysis

While numerous outcomes impact fish habitat, the Fish Habitat Action Team is targeting urbanization stressors:
Shorelines and Impervious Surface



Shoreline and Land Use Impacts:



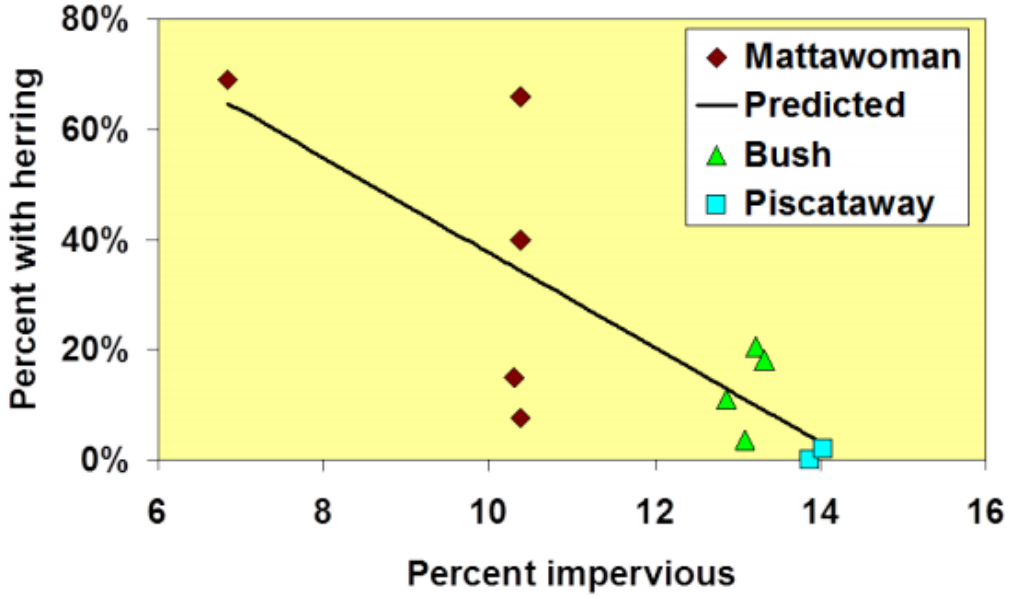
Kornis et al 2017. Figure 5.

More wetland = More fish

More hardened shoreline = Less fish

Impervious Surface and Fish

Figure 2. Percent of stream samples with herring eggs or larvae versus impervious surface for three Maryland watersheds.



More impervious surface= less river herring

From CBC and MD DNR "Land Conservation = Fish Conservation" presentation

3

Challenges:

Are our actions having the expected effect?

Challenges

- We lack an effective mechanism to communicate fish habitat priorities to CBP partners and the local community
- We lack a defined measure of progress
- We lack a direct connection between fishery managers and habitat decision makers

4

Adaptations:

How should we adapt?

Based on what we've learned, we plan to…

- **Conduct a workshop which will inform priority habitat stressor information**
- **Improve outreach to local communities and counties**
  - Co-benefits in WIPs
  - Materials and tools
- **Take meaningful actions that emphasize communication as the end goal**

What We Want

We want to incorporate fish habitat into the Phase III Watershed Implementation Plans.

- **Prioritize BMPs that improve fish habitat**
- **Use fish habitat to drive local WIP buy-in**
- **Serve as a metric of progress**

"EPA also encourages state and local jurisdictions to **consider the corollary benefits** of BMPs that are targeted for implementation. Corollary benefits are those that not only result in water quality improvements but could **address other 2014 Chesapeake Bay Watershed Agreement Outcomes**."

-U.S. EPA's Interim Expectations for the Phase III Watershed Implementation Plans

Discussion

Photo Credits

Slide 2: Aerial Farm and River (Will Parson)
Slide 4: National Fish Habitat Vulnerability Score Map (National Fish Habitat Partnership)
Slide 5: Diversity Meeting (Darius Stanton)
Slide 7 and 11: Forest Buffers (Heather Richards)
Oyster Restoration (Michael Eversmier)
Healthy Watersheds (Mike Zarro)
Climate (Lee Goodwin)
Protected Lands (Middleton Evans)
Impervious Surfaces (Will Parson)
Living Shoreline (Virginia Institute of Marine Science)
All Others found in CBP Management Strategies
Slide 10: Aerial Wetlands (Will Parson)
Bulkhead (Encyclopedia of Puget Sound)
Herring Spawn in Choptank (Dave Harp)
Eelgrass (Delaware Inland Bays)
Slide 12: Wetland and Hardened Shoreline Graphs (Dr. Kornis et. al.)
Slide 13: Impervious Surface and Fish Graph (Chesapeake Bay Commission and Maryland Department of Natural Resources)
Slide 18: Mattawoman Creek Inlet (Marinas.com)

Extra Slides

Presentation template by SlidesCarnival.

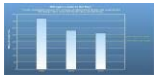
Agreement Goals and Outcomes

Sustainable Fisheries

- Blue Crab Abundance
- Blue Crab Management
- Oyster
- Forage Fish
- Fish Habitat

Vital Habitats Goal

- Wetlands
- Black Duck
- Stream Health
- Brook Trout
- Fish Passage
- Submerged Aquatic Vegetation (SAV)
- Forest Buffer
- Tree Canopy



Water Quality Goal

- 2017 Watershed Implementation Plans (WIP)
- 2025 WIP
- Water Quality Standards Attainment and Monitoring

Toxic Contaminants Goal

- Toxic Contaminants Research
- Toxic Contaminants Policy and Prevention

Healthy Watersheds Goal

- Healthy Waters

Stewardship Goal

- Citizen Stewardship
- Local Leadership
- Diversity

Land Conservation Goal

- Protected Lands
- Land Use Methods and Metrics Development
- Land Use Options Evaluation

Public Access Goal

- Public Access Site Development

Environmental Literacy Goal

- Student
- Sustainable Schools
- Environmental Literacy Planning

Climate Resiliency Goal

- Monitoring and Assessment
- Adaptation Outcome