Chesapeake Bay Program
Science. Restoration Partnership.

Sustainable Fisheries GIT: Fish Habitat

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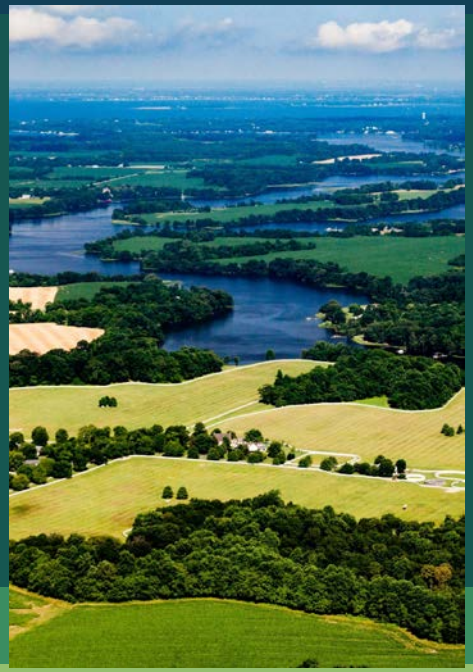
Sustainable Fisheries GIT Coordinator

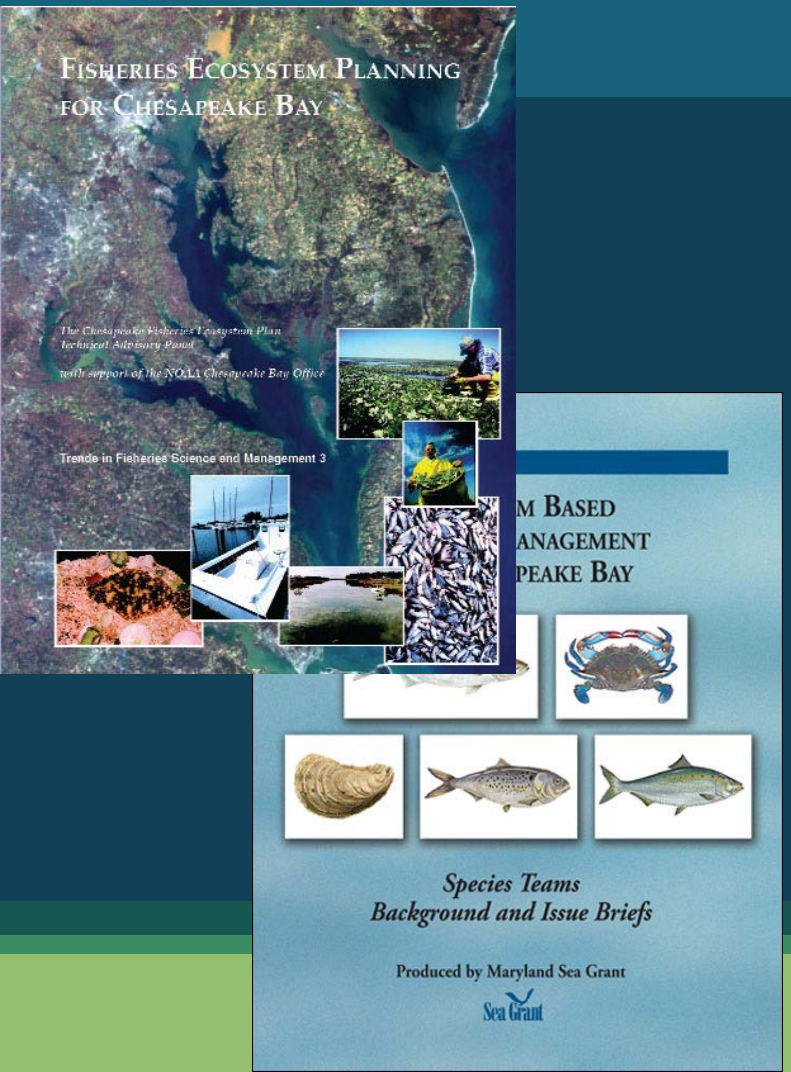
Through the Chesapeake Bay Watershed Agreement*, the Chesapeake Bay Program has committed to…*

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.


Fisheries Ecosystem Planning
for Chesapeake Bay
The Chesapeake Fisheries Ecosystem Plan
Technical Advisory Panel
with support of the NOAA Chesapeake Bay Office
Trends in Fisheries Science and Management 3
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anagement
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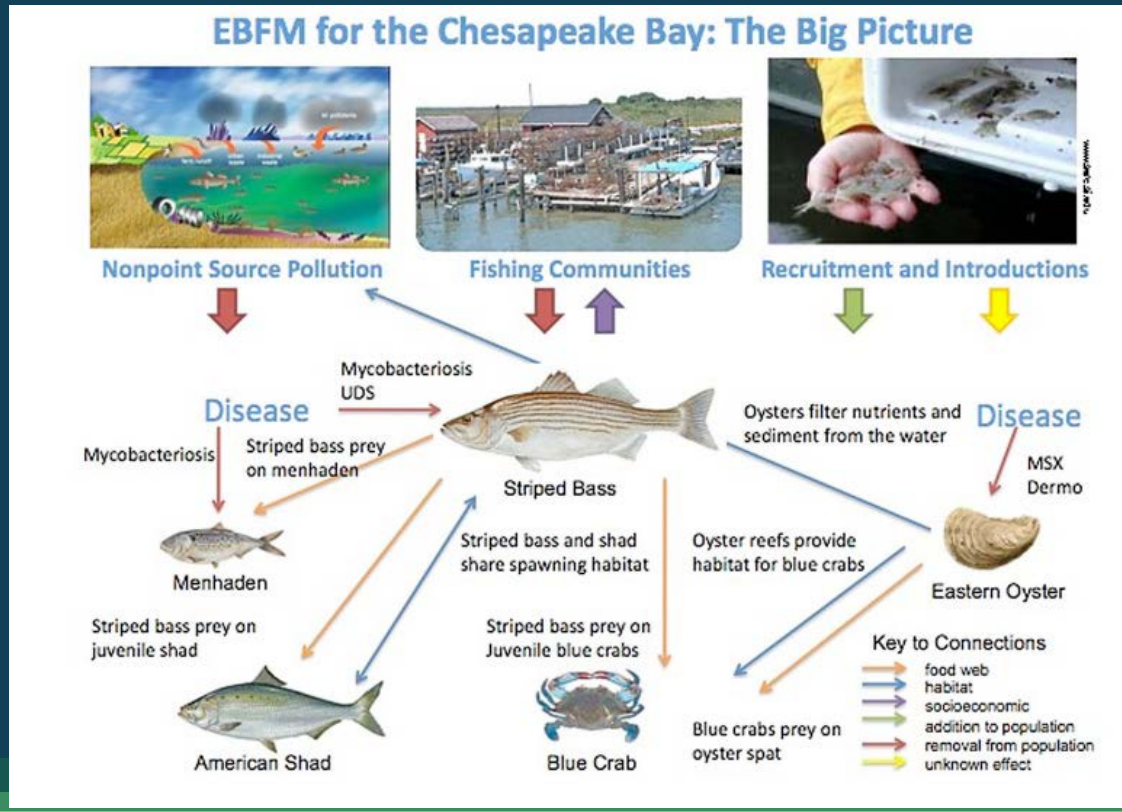
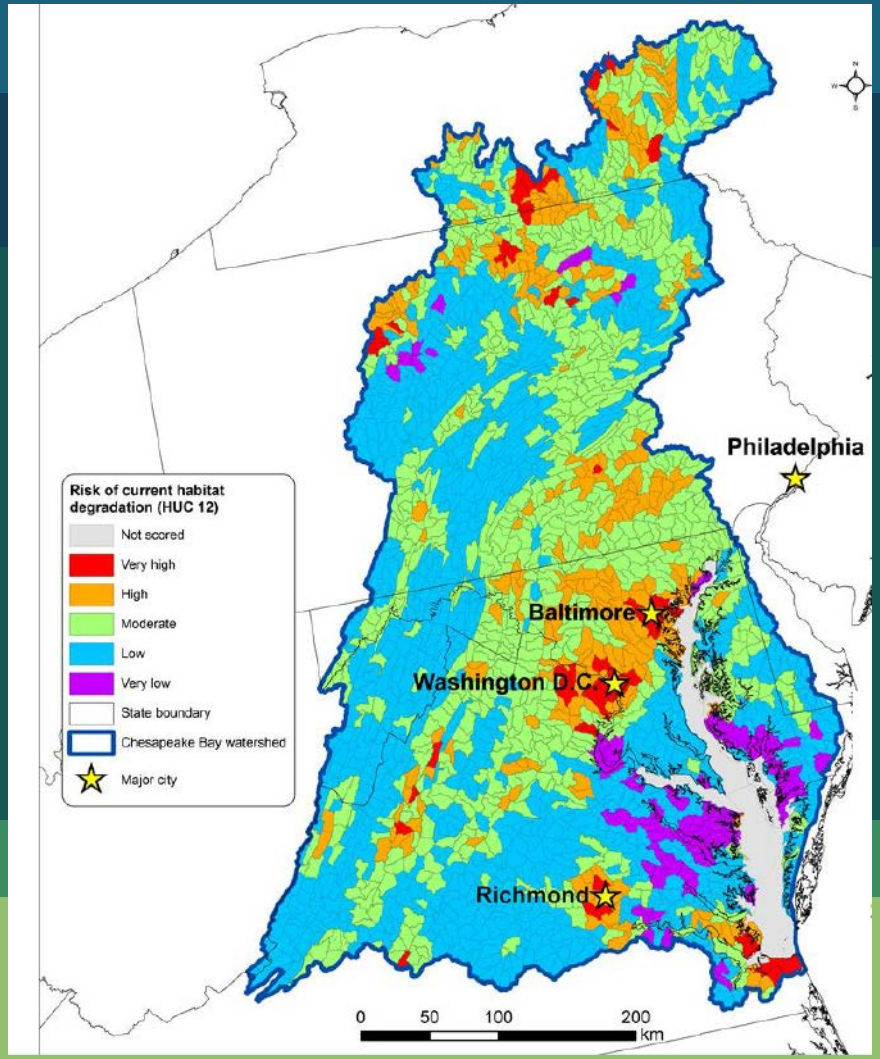
Species Teams
Background and Issue Briefs
Produced by Maryland Sea Grant
Sea Grant


EBFM for the Chesapeake Bay: The Big Picture
Nonpoint Source Pollution
Fishing Communities
Recruitment and Introductions
Disease
Mycobacteriosis
UDS
Mycobacteriosis
Striped bass prey
on menhaden
Striped Bass
Oysters filter nutrients and
sediment from the water
Disease
MSX
Dermo
Menhaden
Striped bass and shad
share spawning habitat
Oyster reefs provide
habitat for blue crabs
Eastern Oyster
Striped bass prey on
juvenile shad
Striped bass prey on
Juvenile blue crabs
Key to Connections
food web
habitat
socioeconomic
addition to population
removal from population
unknown effect
American Shad
Blue Crab
Blue crabs prey on
oyster spat

Fish Habitat Map:

Most limiting disturbances for Chesapeake Bay habitats:

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



- *National Fish Habitat Partnership*

What is our progress?

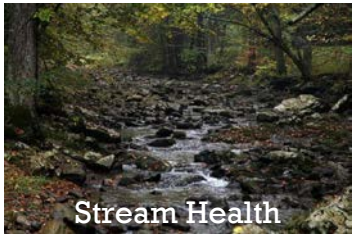
Identified fish habitat threats and stressors among selected species

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

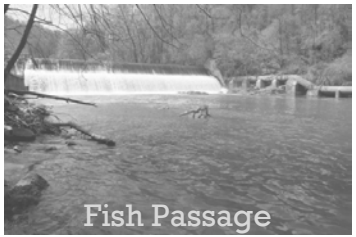
Fish Habitat is the center of the universe!



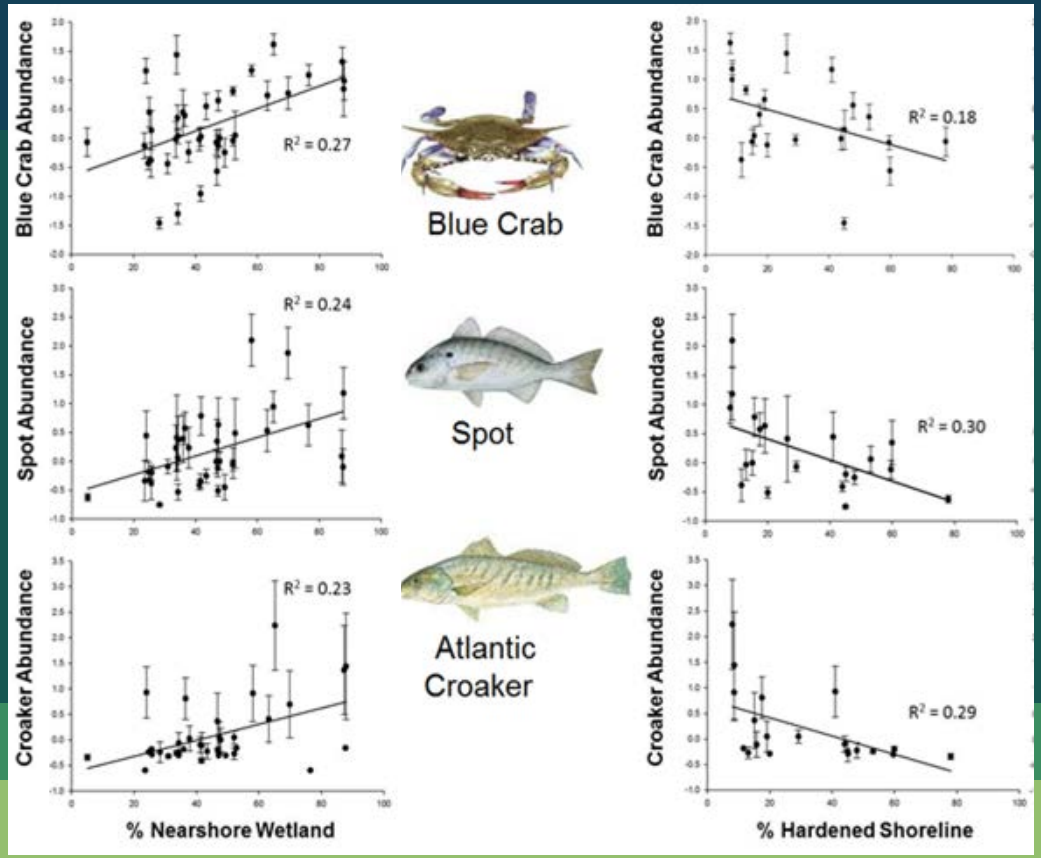
Fish Habitat

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:

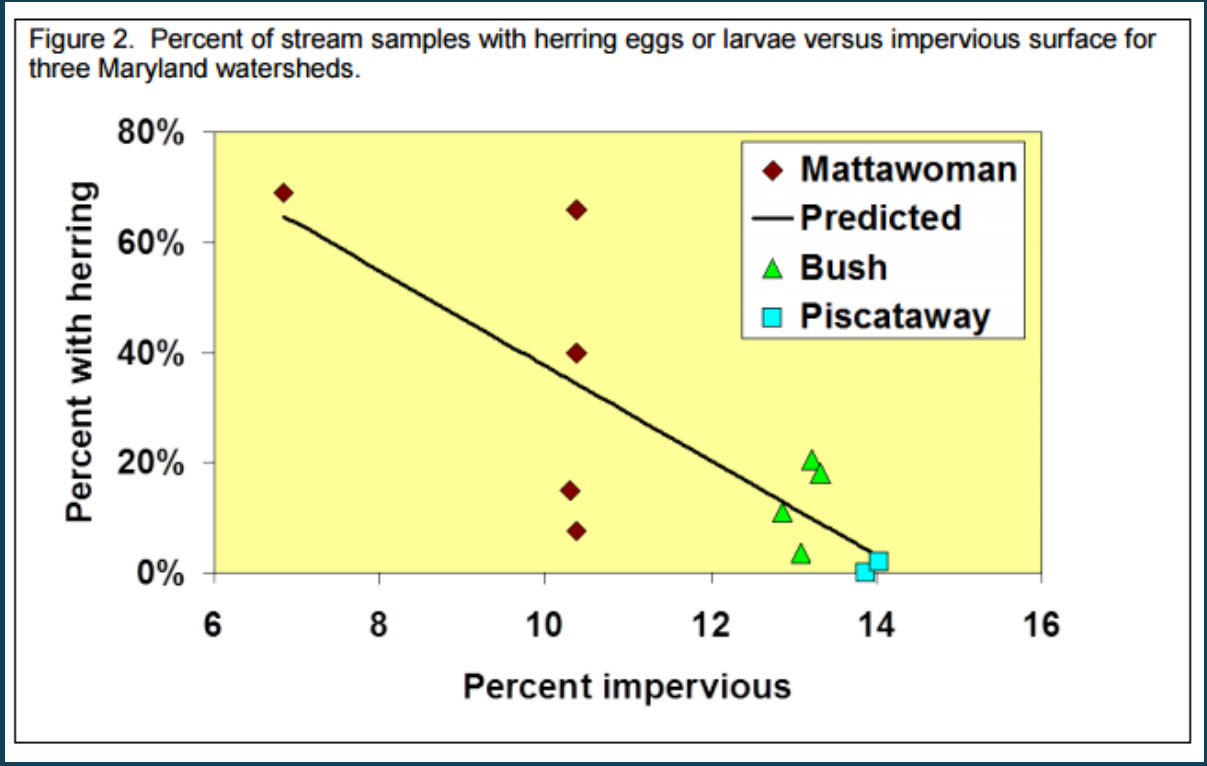


Kornis et al 2017. Figure 5.

More wetland = More fish

More hardened shoreline = Less fish

Impervious Surface and Fish



More impervious surface= less river herring

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

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

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**
  - **Identify best management practices that have water quality and fish habitat benefits in Watershed Implementation Plans**
  - **Develop Materials and tools**
- **Take meaningful actions that emphasize communication as the end goal**

How we will improve our approach

We are working with the Chesapeake Bay Program to incorporate fish habitat into the Phase III Watershed Implementation Plans.

- **Prioritize BMPs that improve fish habitat**
- **Use fish habitat to encourage local support of WIPs**
- **Measure our progress through inclusion in implementation plans**

"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

NOAA FISHERIES

Steps Towards Reaching Watershed Implementation Plans (WIPS)

Bay localities and jurisdictions select **best management practices** (BMPs) to work towards the 2014 Chesapeake Bay Agreement's

Jurisdictions can select BMP's that help achieve the primary goal of reducing nutrient + sediment loads plus achieving additional goals important to them i.e. protecting fish habitat

Watershed Implementation Plans (WIPS) are the roadmap for how jurisdictions will reach the TMDL (total daily maximum load) goals

TMDL's are designed to ensure that pollution control measures needed to restore the Bay and tidal rivers are in place by 2025

Want more information on how to choose BMPs? Contact your local WIP representative

MD	VA	PA	DC	NY	WV	DE
Jim George, MDE	James Davis-Martin, DEQ	Ted Tesler, DEP	Diane Davis, DOE George Onyullo, DOE	Jacqueline Lendrum, DEC	Teresa Koon, DEP David Montali, DEP	Jennifer Walls, DRNEC John Schneider, DNREC