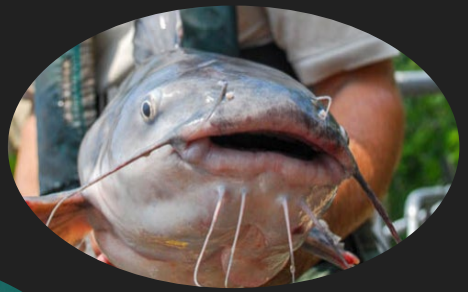
Sustainable Fisheries Goal Implementation Team

Climate Resiliency Workgroup Meeting
January 27, 2020

Goal Protect, restore and enhance finfish, shellfish and other living resources, their habitats and ecological relationships to sustain all fisheries and provide for a balanced ecosystem in the watershed and Bay.



Outcomes

Blue Crab Abundance - Maintain a sustainable blue crab population based on the current 2012 target of 215 million adult females. Refine population targets through 2025 based on best available science.

Oysters - Continually increase finfish and shellfish habitat and water quality benefits from restored oyster populations. Restore native oyster habitat and populations in 10 tributaries by 2025 and ensure their protection.

Outcomes

Forage - Continually improve the Partnership’s capacity to understand the role of forage fish populations in the Chesapeake Bay. By 2016, develop a strategy for assessing the forage fish base available as food for predatory species in the Chesapeake Bay.

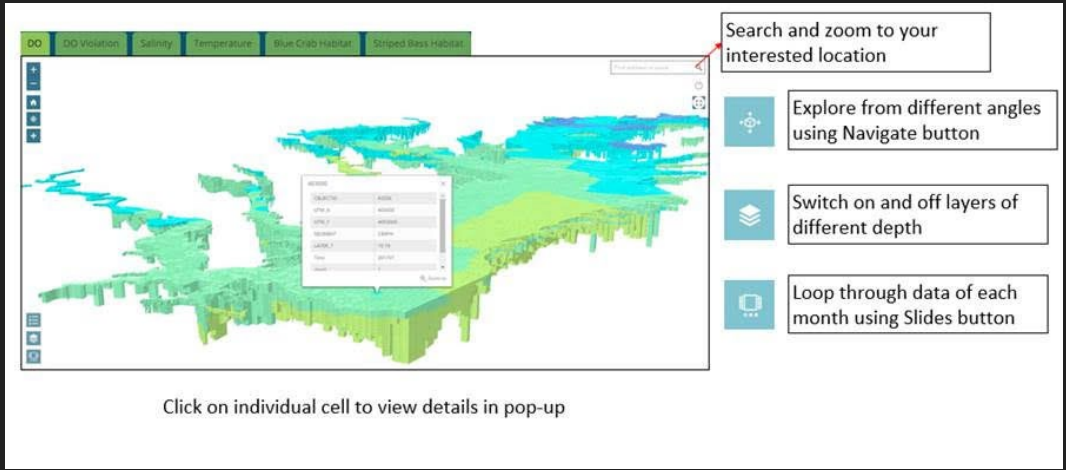
Fish Habitat - Continually improve effectiveness of fish habitat conservation and restoration efforts by identifying and characterizing critical spawning, nursery and forage areas within the Bay and tributaries for important fish and shellfish, and use existing and new tools to integrate information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

Fish Habitat

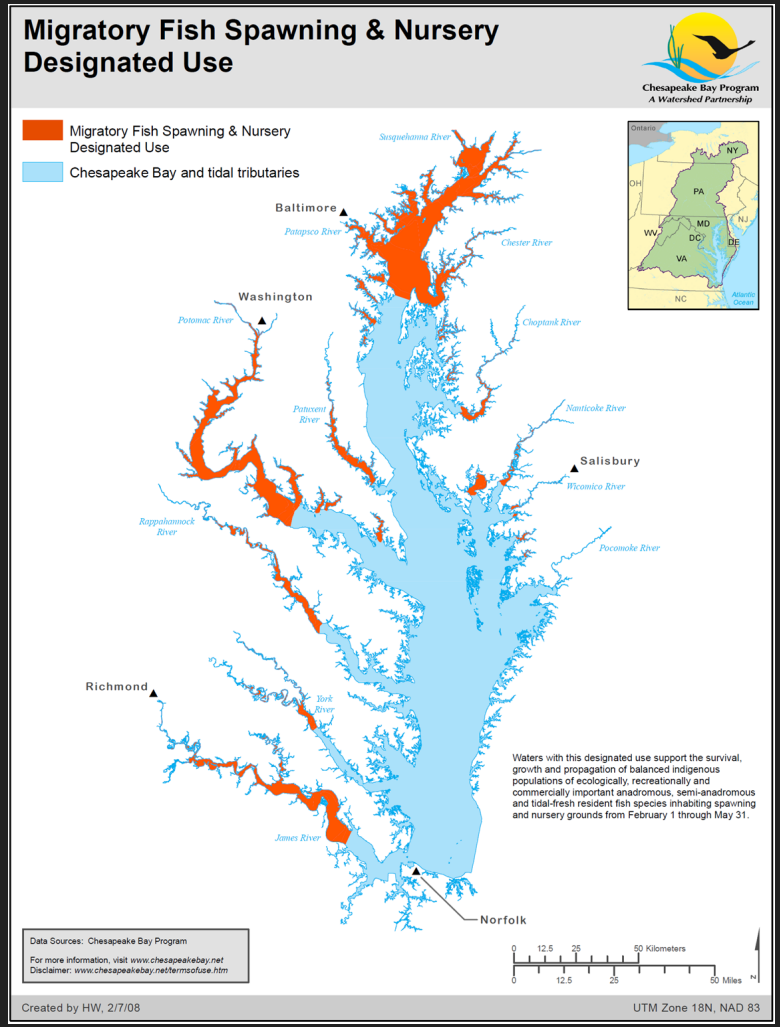
Fish Habitat Action Team aims to better understand the quantity and condition of habitat areas important for fish, and align efforts to provide co-benefits in high priority target areas for conservation and restoration

- Ongoing USGS / NOAA efforts toward a regional Chesapeake Bay Fish Habitat Assessment
- Temperature, precipitation, and sea level rise are all impacting fish habitat
- Build from ongoing actions linking water quality, habitat, and fisheries

Mapping Habitat



Credit: Z. Wei and J. Wolf



Forage Indicators

The Forage Action Team aims to better understand the role and status of forage populations in the Chesapeake Bay.

Focus on indicator development:

- Vernal warming indicator
- Habitat suitability index

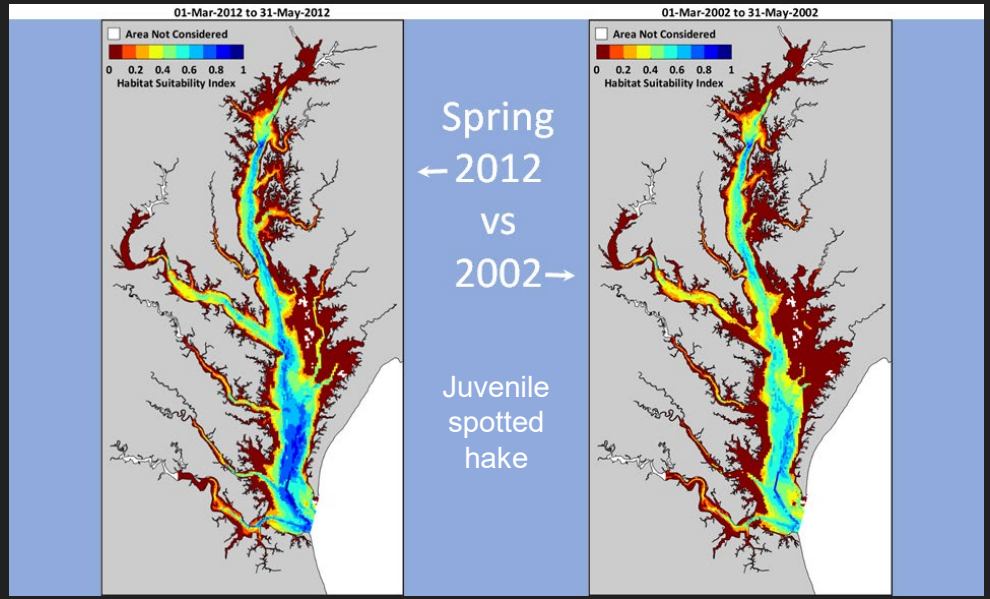
Vernal Warming Indicator

Woodland et al. 2017: Developed an indicator using a temperature index for the timing of warming water temperatures in the spring.

- Climate change ➡ faster warming
- Faster warming correlated with lower summer abundances
- Develop time series of integer day at which 500 DD was achieved using 5°C as a threshold
    - Can show changes in the timing of warming water temperatures

Habitat Suitability Index

Purpose: Quantify suitable habitat for forage fish and assess the relationship between extent of available habitat and forage abundance.



Credit: M. Fabrizio, T. Tuckey, A. Bever

Input: Fisheries surveys, DO model, hydrodynamic model

Indicator: Time series of area or percent of suitable habitat for each taxa

General Interests

- Warming water temperatures
- Freshwater flow/precipitation
- Salinity regimes
- Sea level change
- SAV composition
- Shoreline condition change
- Fish population distribution
- Harmful algal blooms/phytoplankton