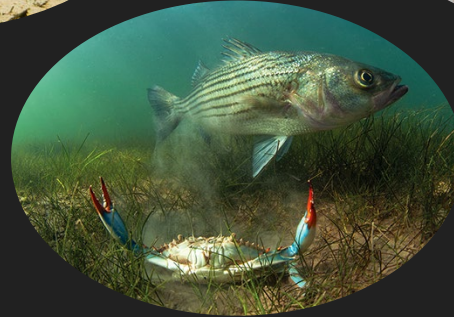


# Sustainable Fisheries Goal Implementation Team

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.

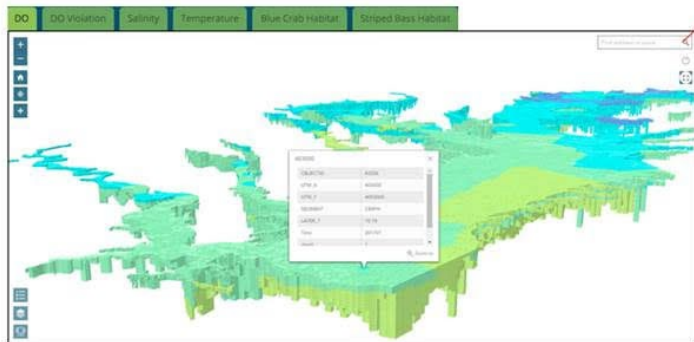
Fish Habitat - Continually improve effectiveness of fish habitat conservation and restoration efforts by identifying and characterizing critical spawning, nursery and forage areas within the Bay and tributaries for important fish and shellfish, and use existing and new tools to integrate information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



Click on individual cell to view details in pop-up

Search and zoom to your interested location



Explore from different angles using Navigate button



Switch on and off layers of different depth



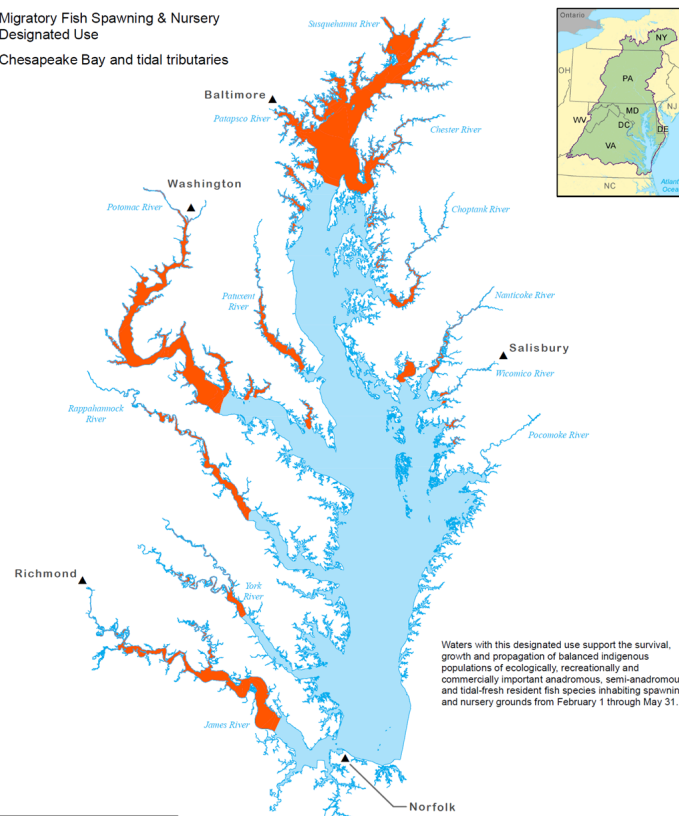
Loop through data of each month using Slides button

Credit: Z. Wei and J. Wolf

## Migratory Fish Spawning & Nursery Designated Use



- Migratory Fish Spawning & Nursery Designated Use
- Chesapeake Bay and tidal tributaries



Waters with this designated use support the survival, growth and propagation of balanced indigenous populations of ecologically, recreationally and commercially important anadromous, semi-anadromous and tidal-fresh resident fish species inhabiting spawning and nursery grounds from February 1 through May 31.

Data Sources: Chesapeake Bay Program  
For more information, visit [www.chesapeakebay.net](http://www.chesapeakebay.net)  
Disclaimer: [www.chesapeakebay.net/terms-of-use.htm](http://www.chesapeakebay.net/terms-of-use.htm)

# 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

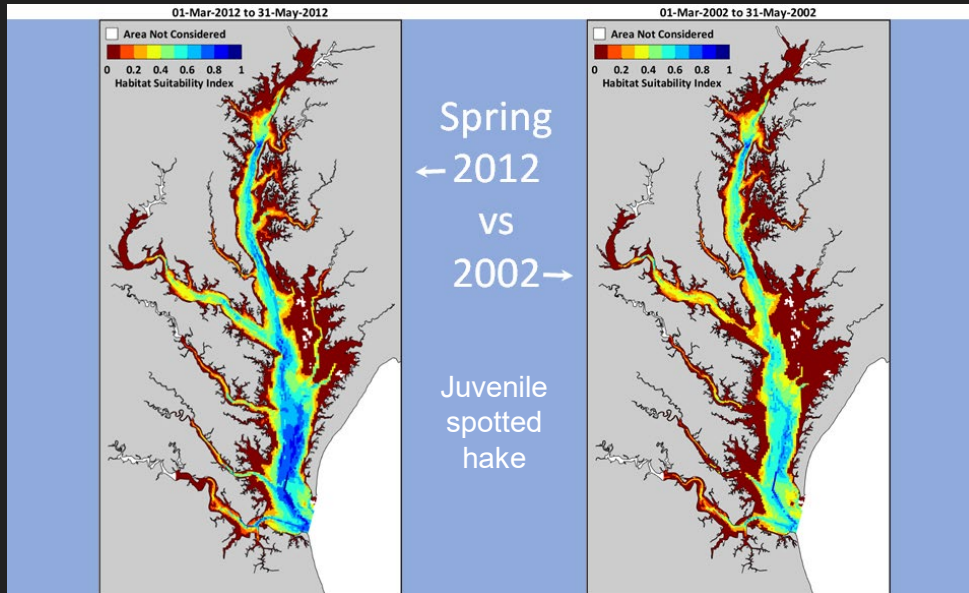
Woodland et al. 2017: Developed an indicator using a temperature index for the timing of warming water temperatures in the spring.

- 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.



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