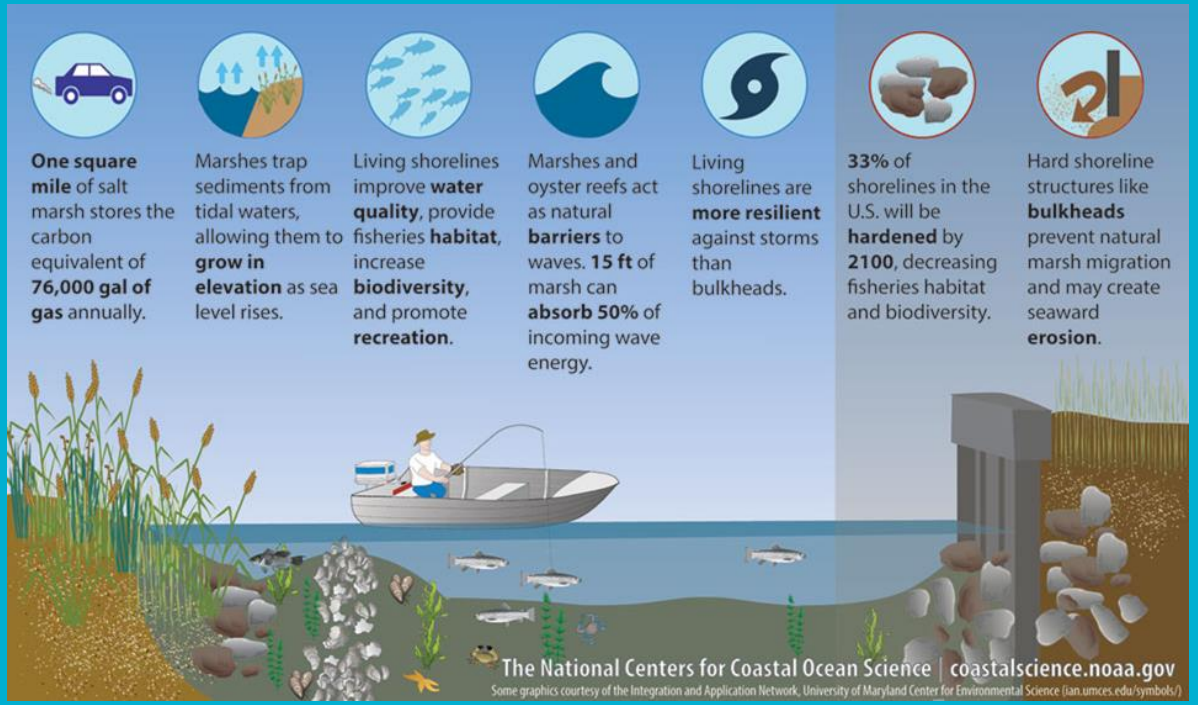
Percent Hardened Shoreline GIS Layers

Justin Shapiro (On behalf of the Fish Habitat Action Team)

Importance to Living Resources

- The land-water interface is important fish habitat



Background on Shoreline Hardening Layers

- 2015 NOAA/SERC study:
  - Looked at 85 sites, quantified influences of shoreline change on ecosystem health. Shoreline development was linked to decline in a number of species.
  - Can we establish thresholds? Leading to...
- These layers were developed in response to a VIMS GIT-funded study - “Threshold effects of altered shorelines and other stressors on forage species in Chesapeake Bay”
  - Shoreline hardening of 10-30% (17% mean) as a threshold number for species decline of seven analyzed forage species
  - Juvenile blue crab showed general decline with an increase in shoreline development
- Additional information:
  - Final Report: Chesapeake Bay Program Website
  - Project Contacts: Rochelle Seitz, Rom Lipcius, Troy Tuckey, Donna Bilkovic (VIMS)

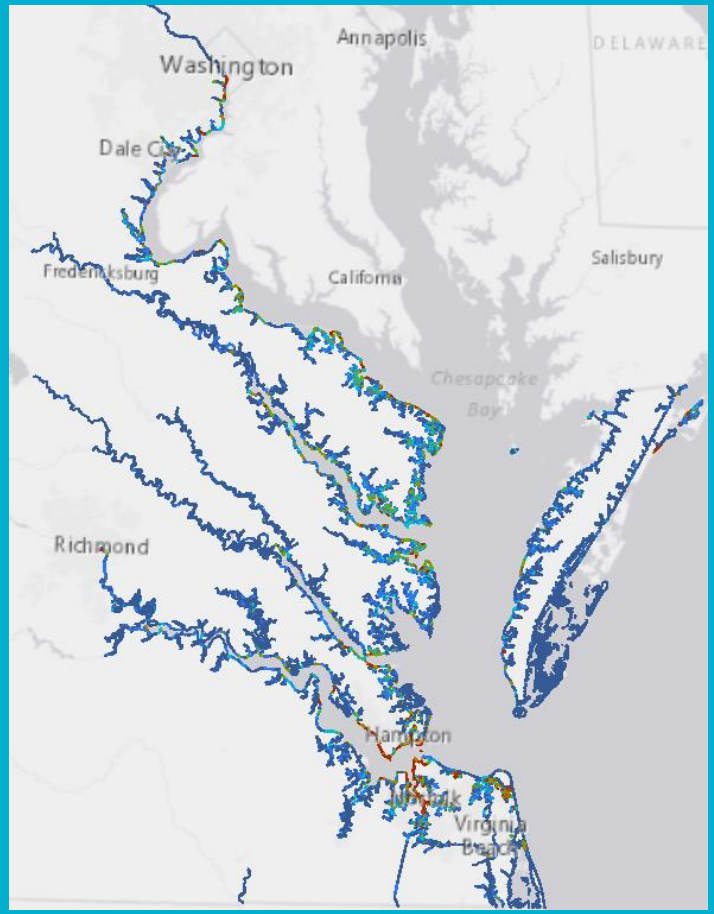
Written into Forage and Fish Habitat Action Plans

- FHAT Action 3.3: *"Develop a percent hardened shoreline GIS layer using existing shoreline inventory data and connect to shoreline threshold results - Map products showing areas of relative high shoreline development, to inform communication about shoreline management."*

- Forage Action 3.1: *"Work with CBP partners to develop a GIS product that maps shoreline conditions around the Chesapeake Bay using the shoreline development thresholds identified."*

Mapping Layers for Maryland and Virginia

- CBP GIS team used shoreline inventory data from VIMS SMM to develop maps
  - VA: Layers complete (Using 2018 inventory data)
  - MD: Four counties complete
    - **Anne Arundel, Dorchester, Talbot, and Calvert**
    - Four more counties currently being inventoried (Goal of 2022 completion)
    - Funding needed to complete inventory of nine additional counties
- Additional information:
  - Completed layers: Maryland & Virginia
  - GIS Team Contact: Angie Wei (CBPO)
  - VIMS Shoreline Inventory SMM Contact: Karinna Nunez



Next Steps & Questions

- Recent Applications
  - Provided maps to support bay-specific narrative for NOAA's 2021 State of the Ecosystem Report
  - Simple calculations for now: ~12% of VA shorelines are above 30% threshold corresponding to negative impacts on forage
- Indicator development (Fish Habitat and Forage)
  - Connecting habitat condition to important forage species
  - Future trends analyses: Visualizing change
    - Length/time standardization between inventories will require additional funding. FHAT interested in supporting this
  - VIMS designing dashboards/indicators to look at shoreline condition
- Audience: Getting these products in the hands of stakeholders:
  - One audience is local planners.
    - Coordinating with LLWG to highlight information at at APA webinar series
  - Any contacts or groups who are focused on living shorelines, or funding living shorelines, that could benefit from utilizing these layers?
    - Ex. Utilizing in RFPs
    - Guiding restoration projects (Ex. Protect areas <10%, restore areas between 10%-30%