



## *Shrimp FMP Amendment 2*

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

Marine Fisheries

May 2021 MFC Meeting | Chris Stewart, Jason Rock, Dan Zapf | May 20, 2021



# *Presentation Outline*

- Draft Amendment 2
  - Goal and Objectives
  - Overview of Fishery
    - Management unit
    - Commercial landings
    - Recreational landings
  - Data limitations
  - Points to consider
  - Issue paper overview
  - Timeline
- Action Item
  - Vote on sending Draft Amendment 2 for public and MFC Advisory Committee review



## *Draft Amendment 2: Goal and Objectives*

### **Goal:**

Manage the shrimp fishery to provide adequate resource protection, optimize long-term harvest, and minimize ecosystem impacts.

### **Objectives:**

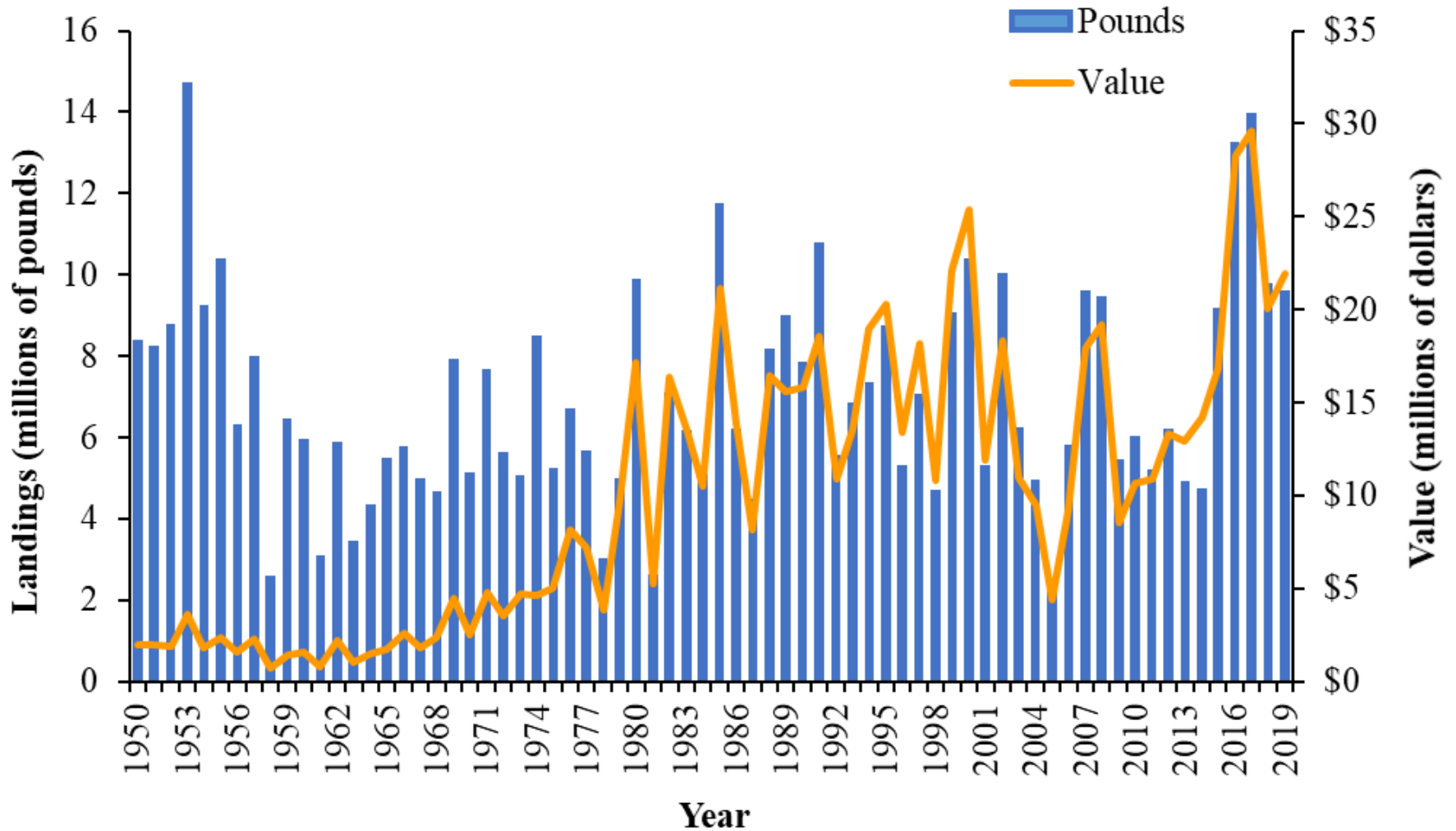
- Reduce bycatch of non-target species of finfish and crustaceans, as well as protected, threatened, and endangered species.
- Promote the restoration, enhancement, and protection of habitat and environmental quality in a manner consistent with the CHPP.
- Develop a strategy through the CHPP to review current nursery areas and to identify and evaluate potential areas suitable for designation.
- Use biological, environmental, habitat, fishery, social, and economic data needed to effectively monitor and manage the shrimp fishery and its ecosystem impacts (i.e., bycatch, habitat degradation).
- Promote implementation of research and education programs designed to improve stakeholder and the general public's understanding of shrimp trawl bycatch impacts on fish population dynamics.



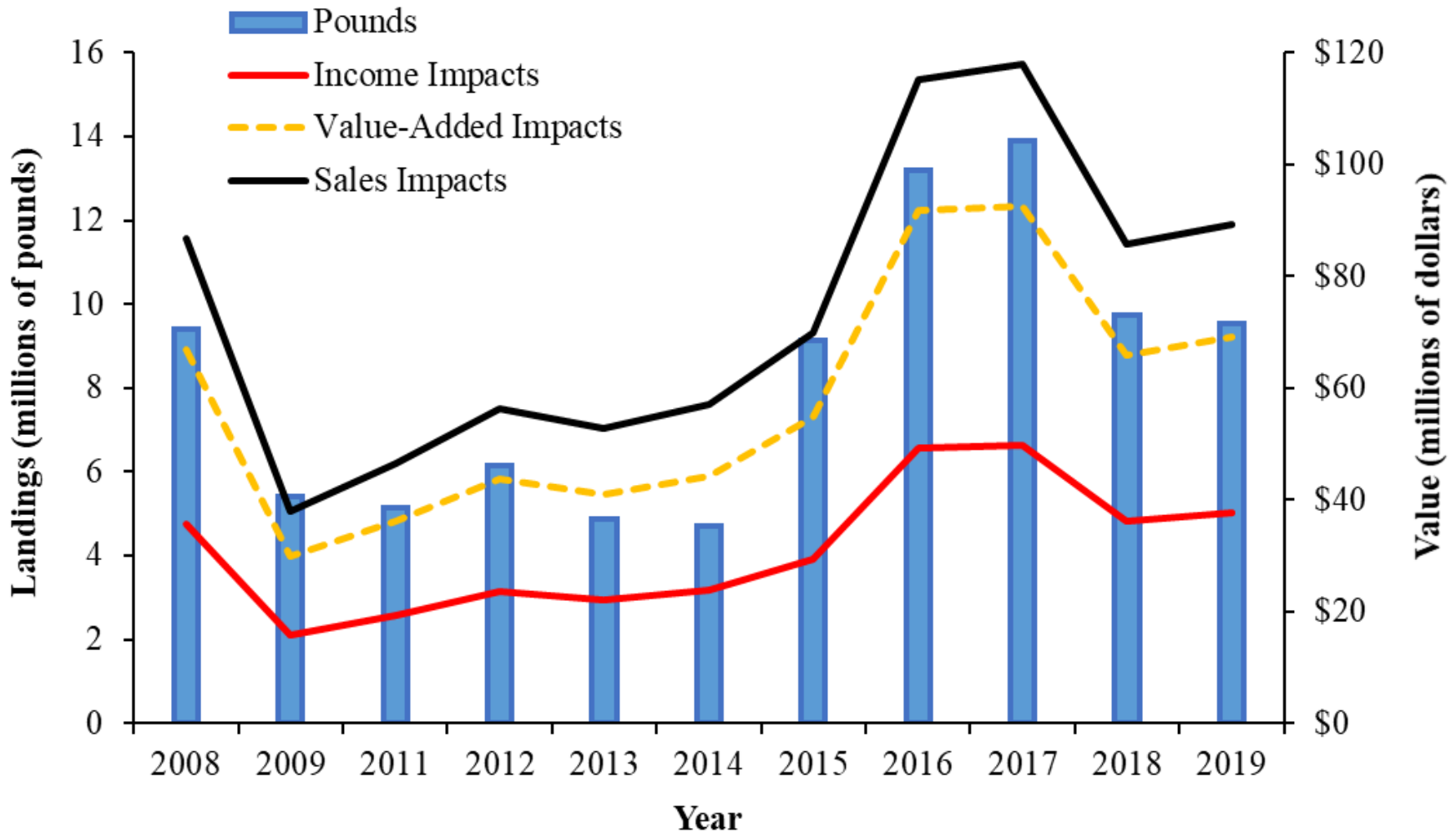
## Management Unit

Species	Spawning	Juvenile Recruitment	Season
<p><b>Brown Shrimp</b></p>  <p><i>(Farfantepenaeus aztecus)</i></p>	February-March	February-June, peaking in April and May	Summer and fall
<p><b>Pink Shrimp</b></p>  <p><i>(F. duorarum)</i></p>	April-July	June-October	Spring
<p><b>White Shrimp</b></p>  <p><i>(Litopenaeus setiferus)</i></p>	March-November	June-August/ September, peaking in early June and mid- August	Late summer and fall

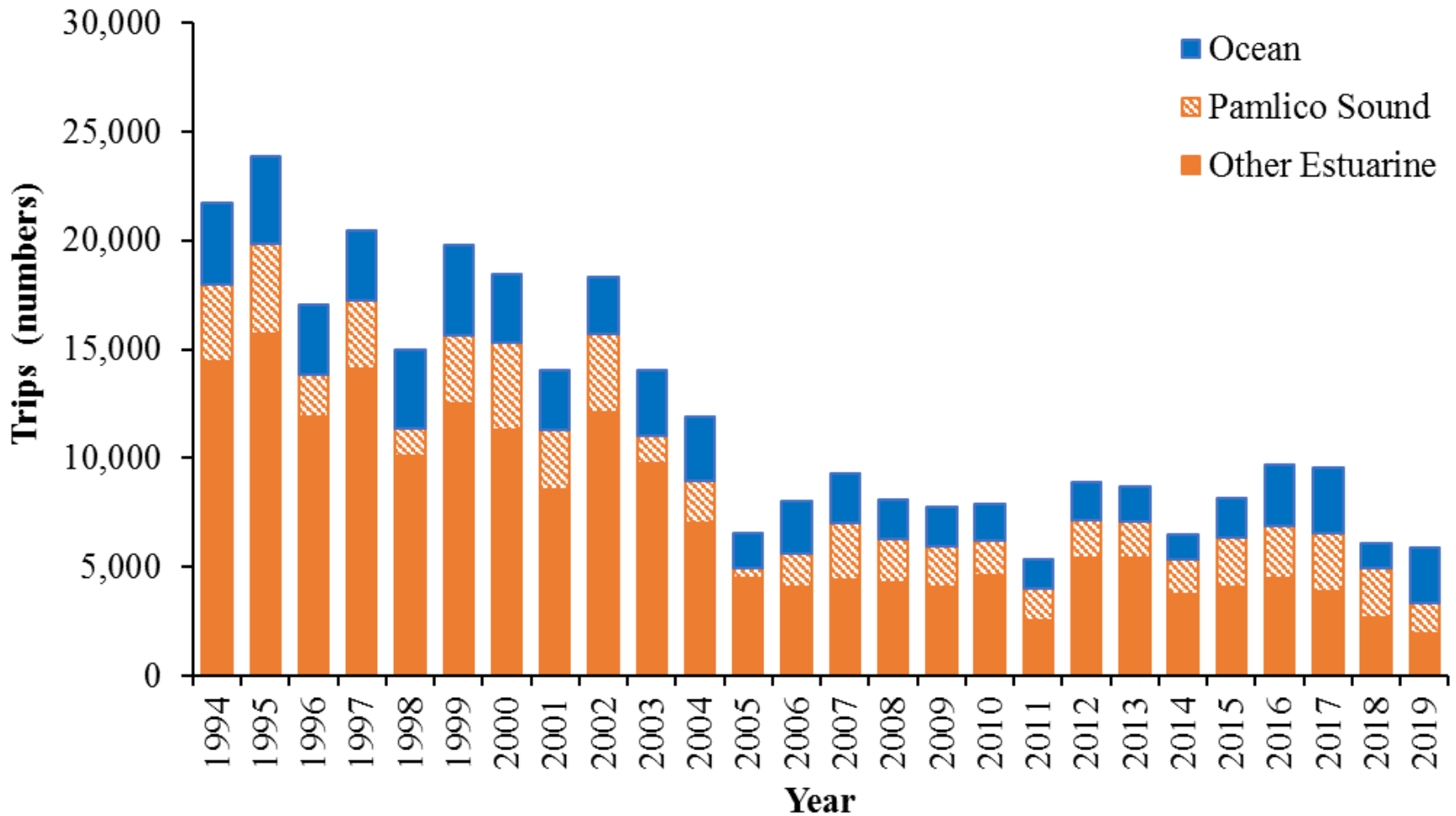
# Commercial Landings and Unadjusted Value



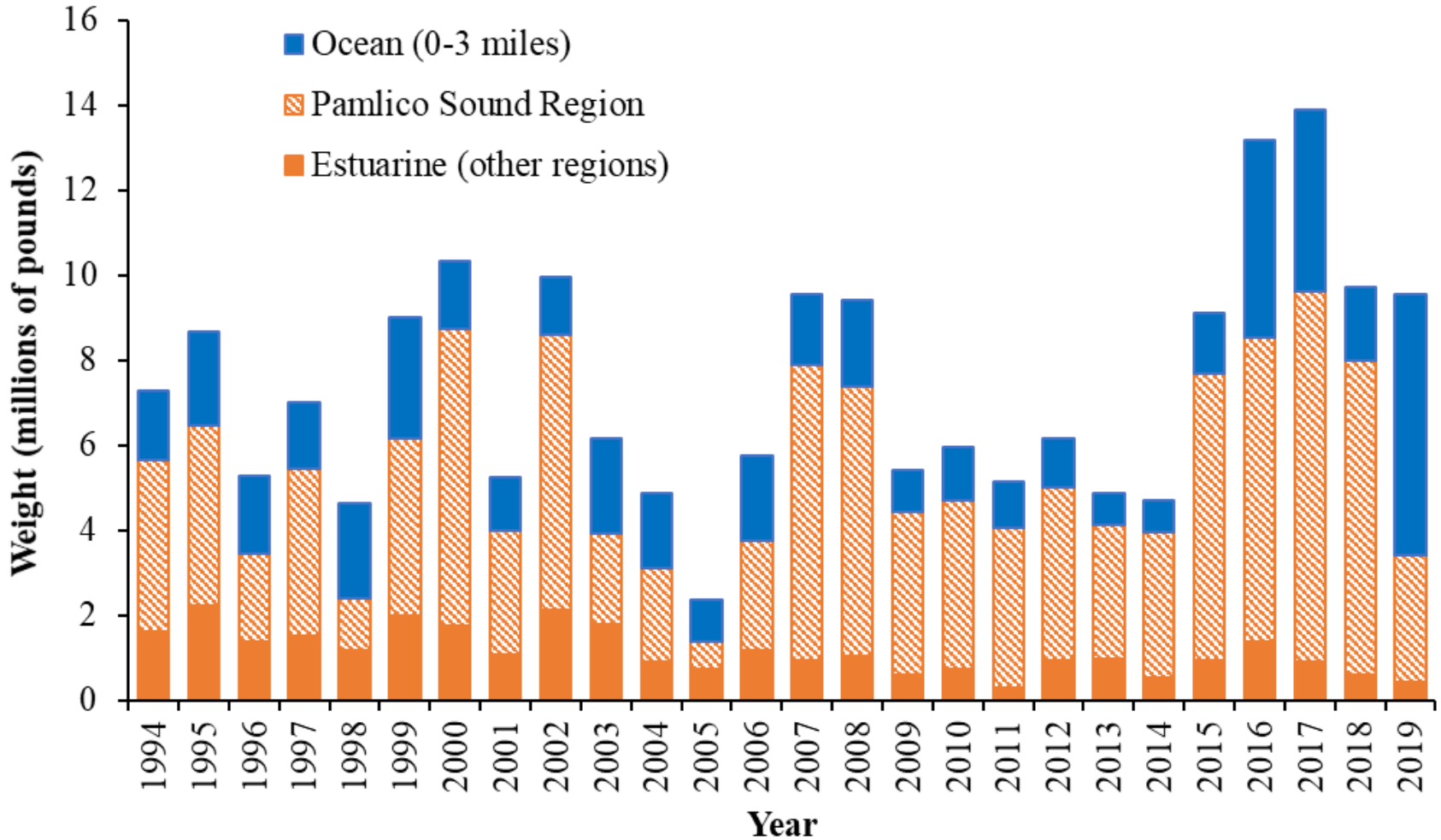
# Commercial Landings and Adjusted Value



# Commercial Trips

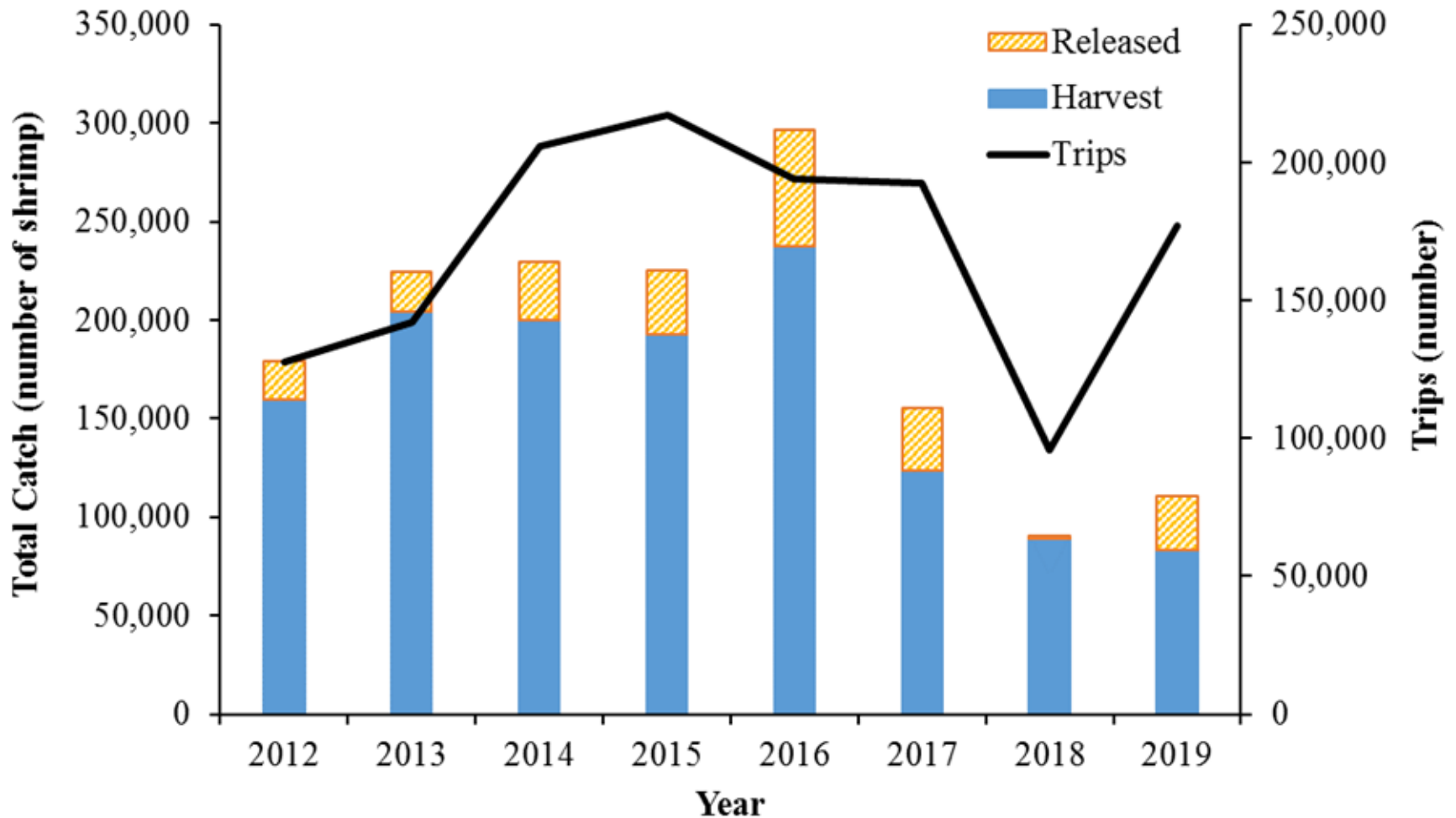


# Commercial Landings by Waterbody



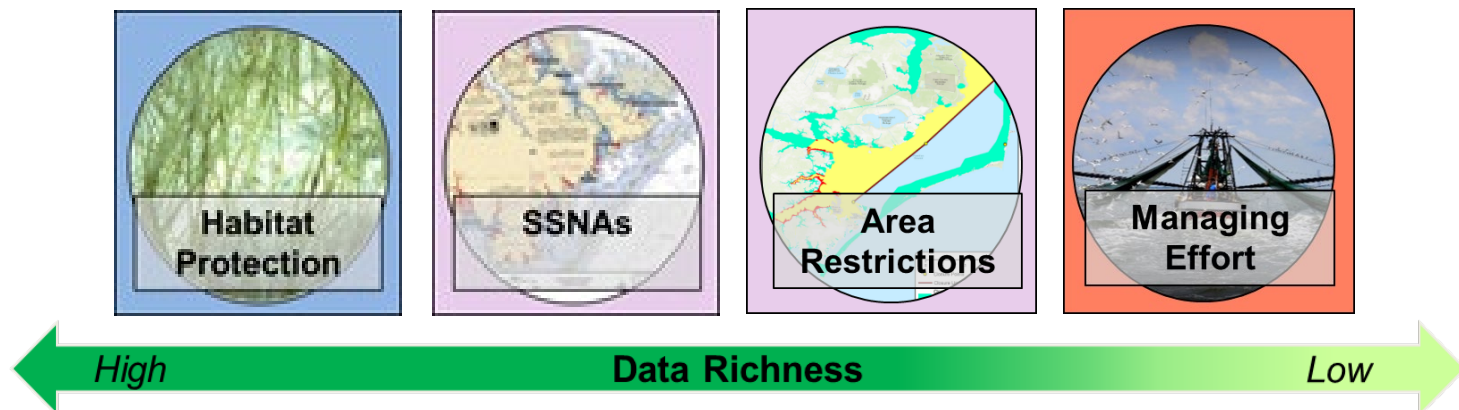


## *Recreational Cast Nets and Seines*



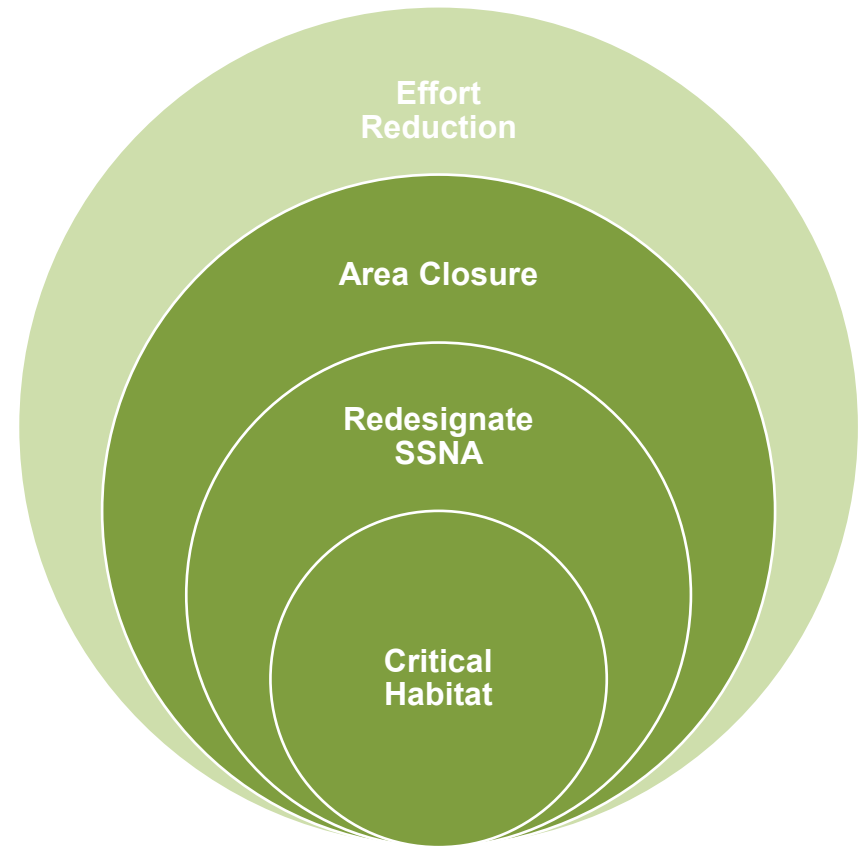
## *Draft Amendment 2: Data Limitations*

- Total bycatch in the N.C. shrimp trawl fishery and its population level impact on fish stocks is unknown
- Quantifying the amount of bycatch in the N.C. shrimp trawl fishery requires detailed effort and bycatch data
- Quantifying the benefits of habitat protection and bycatch reductions of proposed management measures requires additional biological data
- Quantifying the economic impacts of proposed management measures requires additional biological and economic data

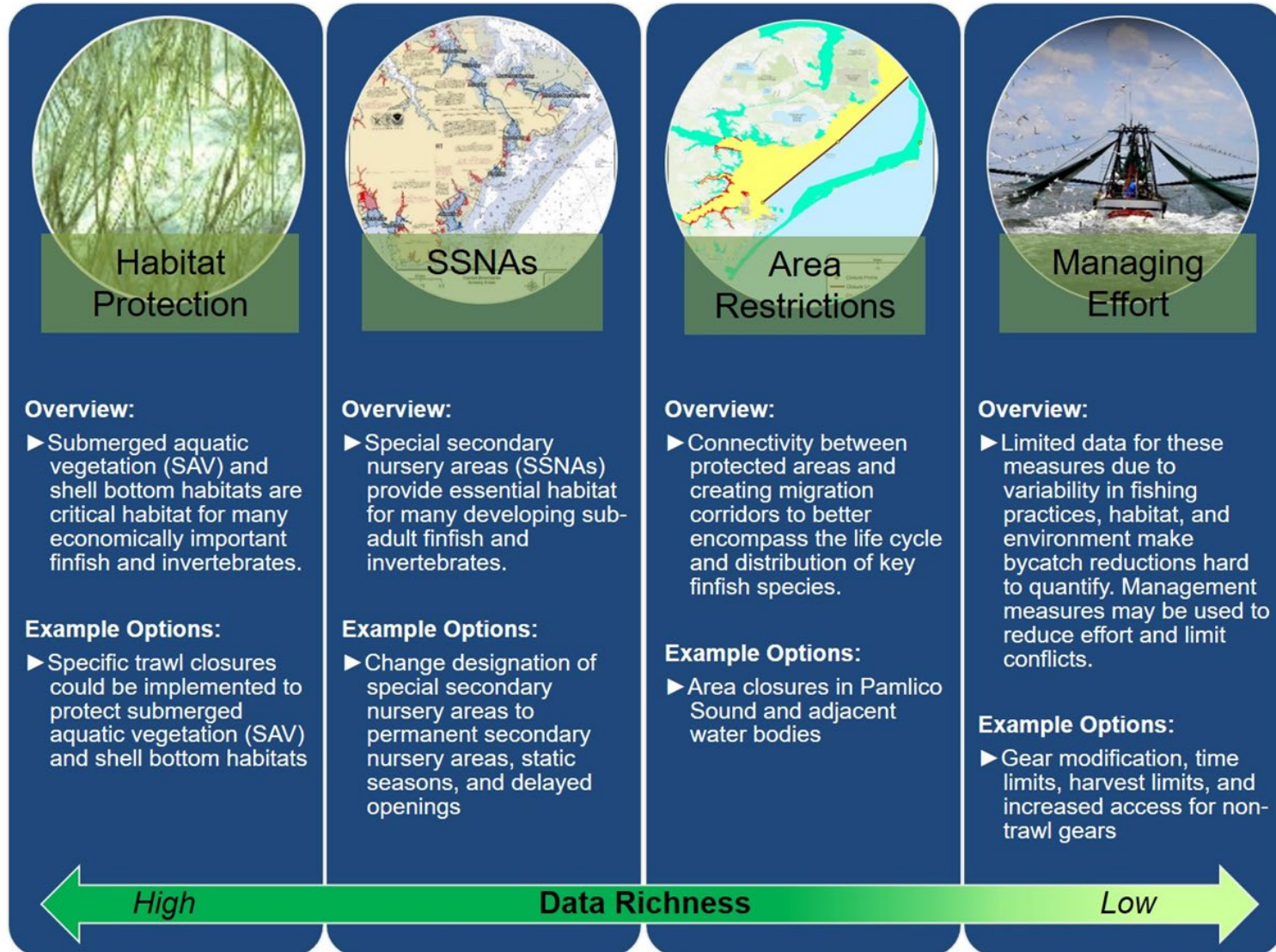


## *Draft Amendment 2: Points to Consider*

- Area closures, effort, and gear restrictions are effective measures to reduce bycatch in the shrimp trawl fishery.
- Issue papers are inter-related; management measures discussed in one issue paper must be considered when discussing the other issue papers.
- Status quo does not meet the goal and objectives of Amendment 2



# Draft Amendment 2: Issue paper Overview





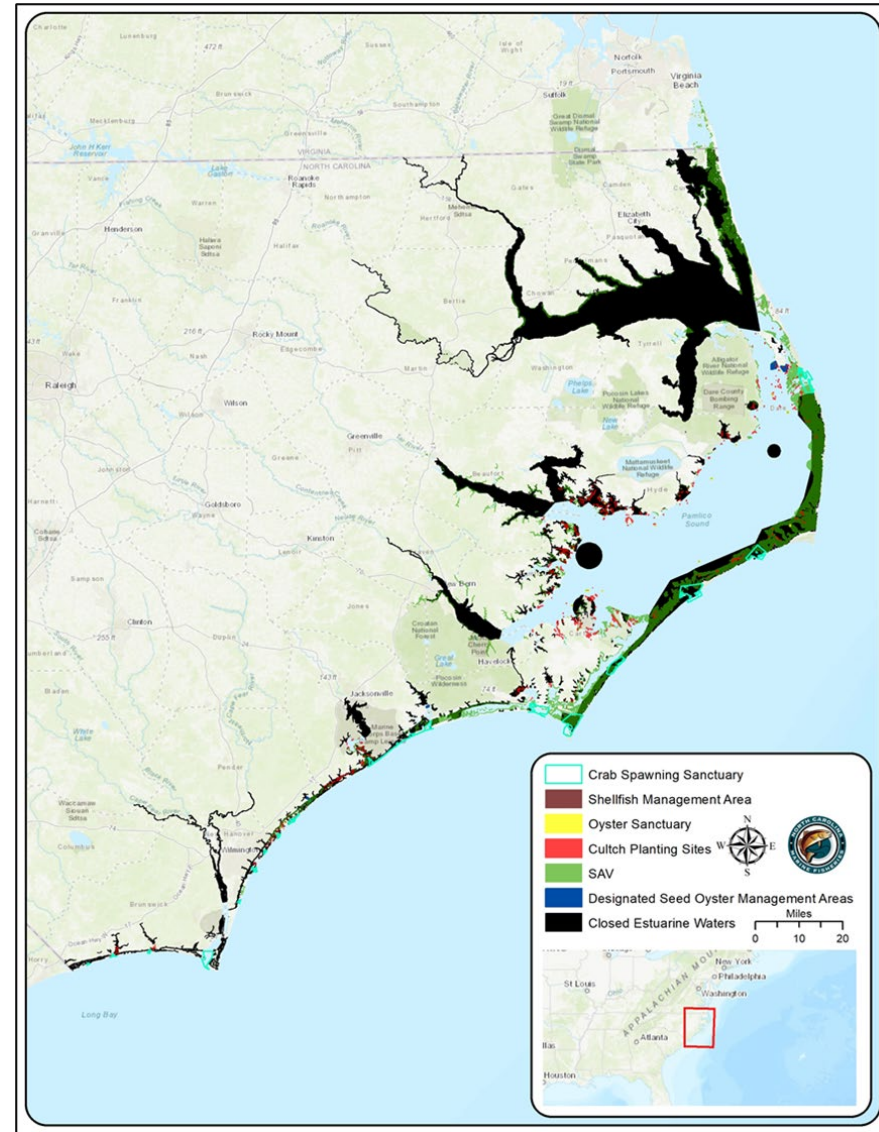
# Management of Shrimp Trawling for Protection of Critical Sea Grass and Shell Bottom Habitats

## Overview

- Habitat protection for submerged aquatic vegetation (SAV) and shell bottom habitats
- Important habitat for many fish and invertebrates

## Management Measures

- Expand shell bottom and SAV protections
  - Trawl net prohibited, no shrimp trawl areas
  - Mechanical Clam Harvest Areas – Core Sound and North River





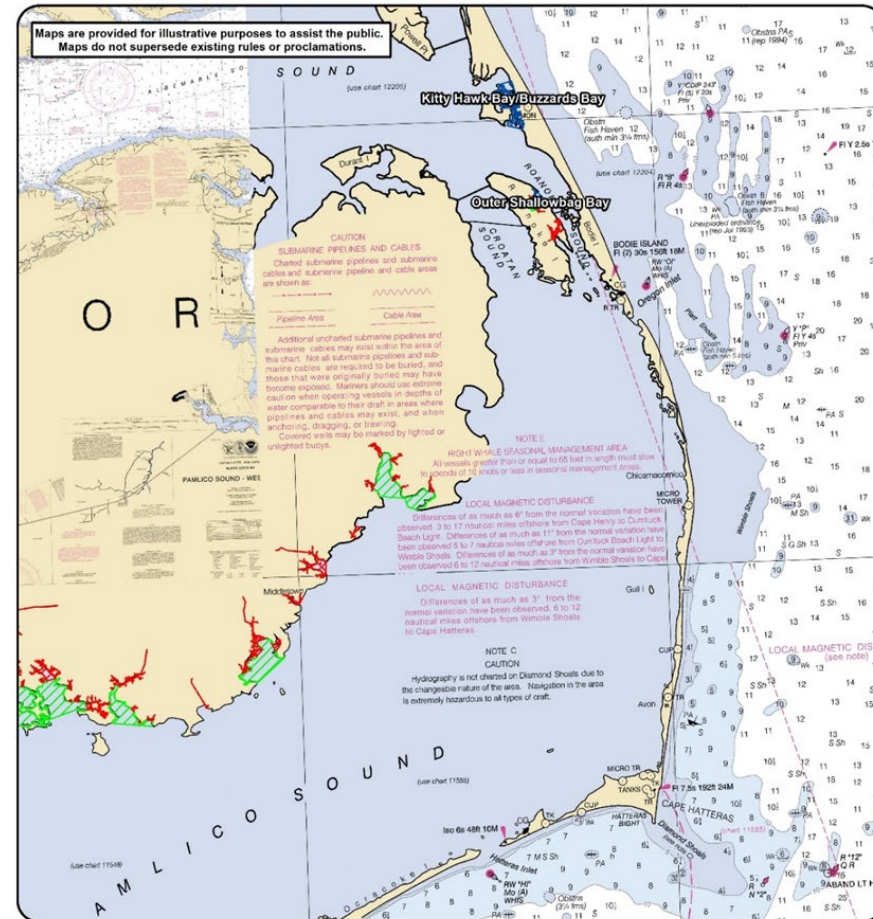
# Shrimp Management in Special Secondary Nursery Areas (SSNAs)

## Overview

- Bycatch reduction in remaining 15 SSNAs in Roanoke and Core sounds, New River
- SSNAs are ecologically similar to primary nursery areas

## Management Measures

- Static seasons
- Delayed openings
- Complete closures





# *Reducing Shrimp Trawl Bycatch Through Area Closures That Increase Connectivity Between Areas*

## Overview

- Focus is Pamlico Sound and adjacent waterbodies
- Hot spot analysis identifies areas of high finfish and shrimp abundance
- Create connectivity with existing closures

## Management measures

- Permanent closure
  - Pamlico Sound and tributaries
  - Neuse, Bay, Pamlico rivers
  - Croatan and Roanoke sounds
- Seasonal closures





# *Managing Effort and Gear in the NC Shrimp Fishery to Reduce Bycatch*

## Overview

- Bycatch reduction through effort reductions and gear management

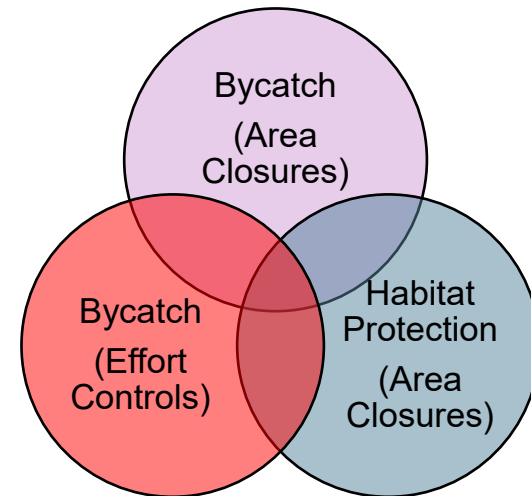
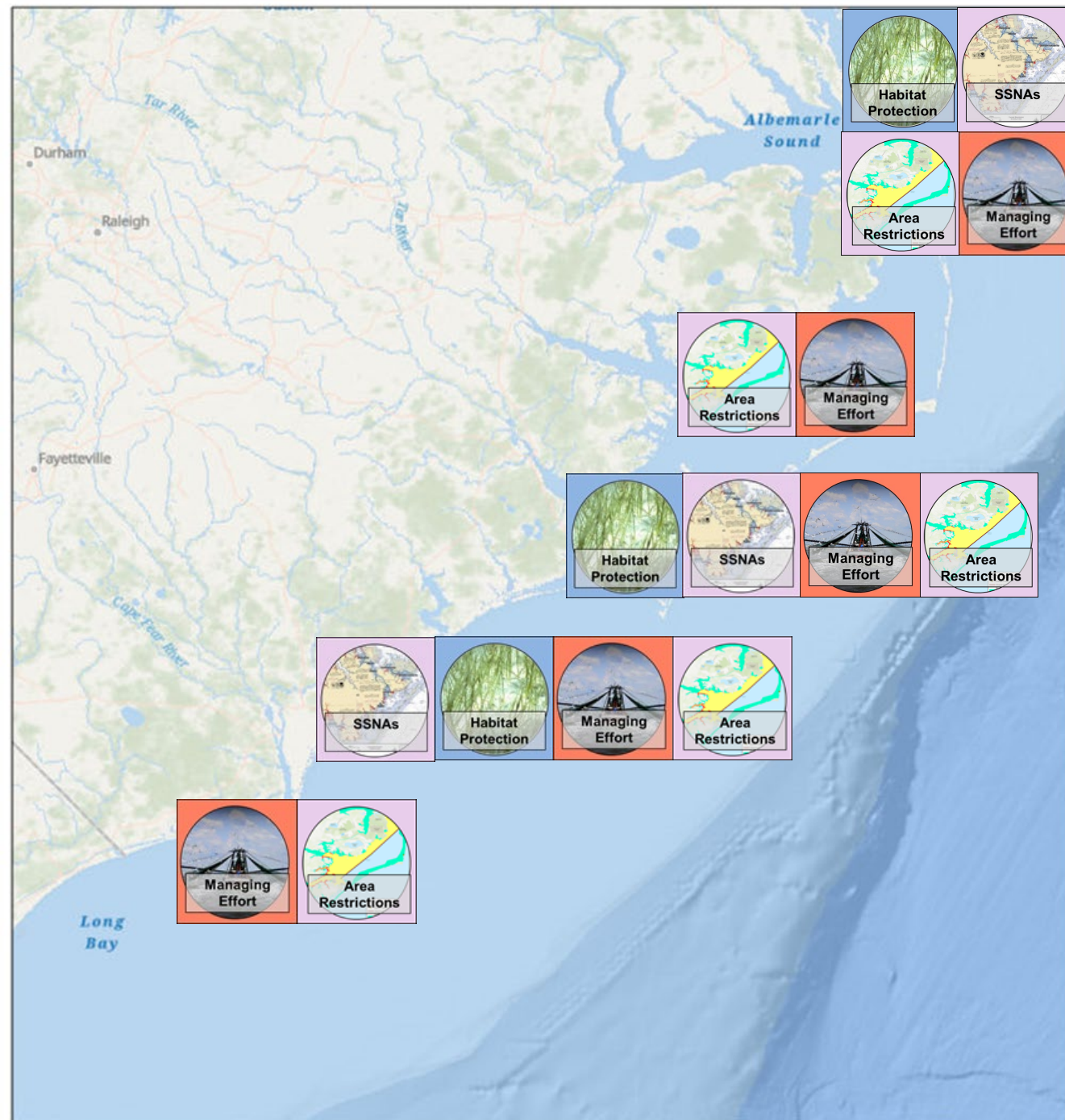
## Management measures

- Time Restrictions
  - Fishing day
  - Daily fishing time
  - Tow time
- Gear Restrictions
  - Headrope limits
- Harvest Restrictions
  - Commercial trip limit
  - Recreational creel limit
  - Limited Entry





# Interconnectivity of Management Options



# *Shrimp FMP Amendment 2 Next Steps*

• Division holds public scoping period

• Marine Fisheries Commission approve goal and objectives of FMP

• Division drafting FMP

• Division hold workshops to further develop draft FMP with plan advisory committee

• Division updating draft plan

• **Marine Fisheries Commission vote to send draft FMP for public and advisory committee review**

Next Step

• Commission advisory committees meet to review draft FMP and receive public comment

• Marine Fisheries Commission select preferred management options

• Department of Environmental Quality secretary and legislative review draft FMP

• Marine Fisheries Commission vote on final adoption of FMP

• Division and Marine Fisheries Commission implement management strategies

## *Action Item*

Vote on sending Draft Amendment 2 to the Shrimp Fishery Management Plan out for public comment and Marine Fisheries Commission Advisory Committee review.



# Questions?

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