



N.C. Shrimp FMP Amendment 2

DEPARTMENT OF ENVIRONMENTAL QUALITY

Marine Fisheries

November 2021 MFC Meeting | Chris Stewart, Jason Rock, Dan Zapf | Nov. 18, 2021



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

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

• **Marine Fisheries Commission select preferred management options**

Next Step

• 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

Amendment 2 Issue Papers



Habitat Protection

Overview:

- ▶ Submerged aquatic vegetation (SAV) and shell bottom habitats are critical habitat for many economically important finfish and invertebrates.

Example Options:

- ▶ Specific trawl closures could be implemented to protect submerged aquatic vegetation (SAV) and shell bottom habitats



SSNAs

Overview:

- ▶ Special secondary nursery areas (SSNAs) provide essential habitat for many developing sub-adult finfish and invertebrates.

Example Options:

- ▶ Change designation of special secondary nursery areas to permanent secondary nursery areas, static seasons, and delayed openings



Area Restrictions

Overview:

- ▶ Connectivity between protected areas and creating migration corridors to better encompass the life cycle and distribution of key finfish species.

Example Options:

- ▶ Area closures in Pamlico Sound and adjacent waterbodies



Managing Effort

Overview:

- ▶ Limited data for these measures due to variability in fishing practices, habitat, and environment make bycatch reductions hard to quantify. Management measures may be used to reduce effort and limit conflicts.

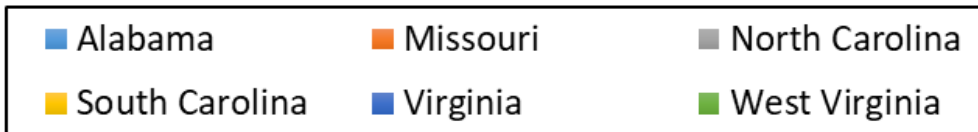
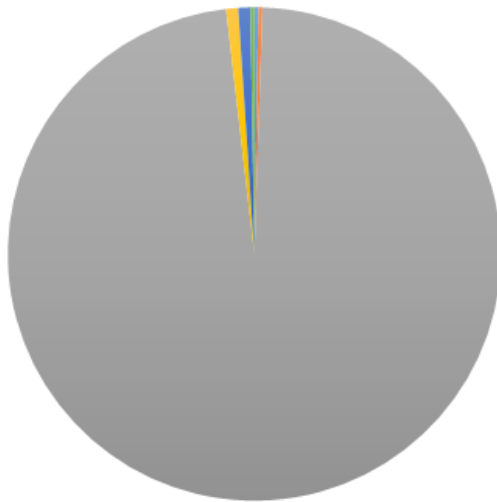
Example Options:

- ▶ Gear modification, time limits, harvest limits, and increased access for non-trawl gears

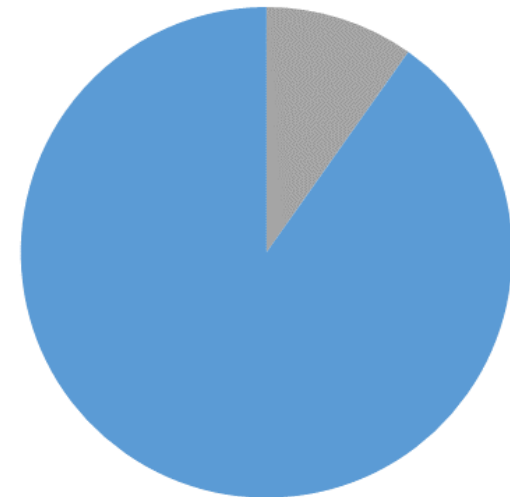


Public Comment: Online Questionnaire

Home State

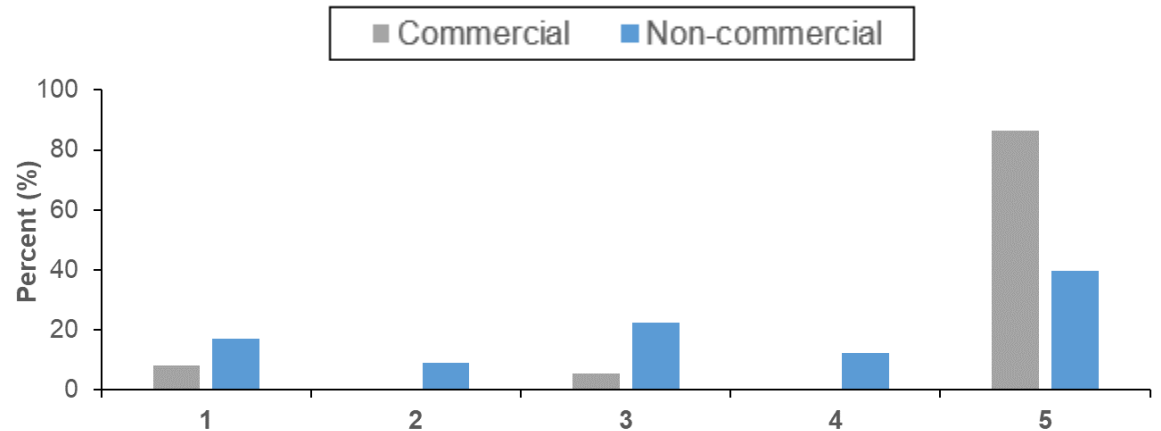


User Group

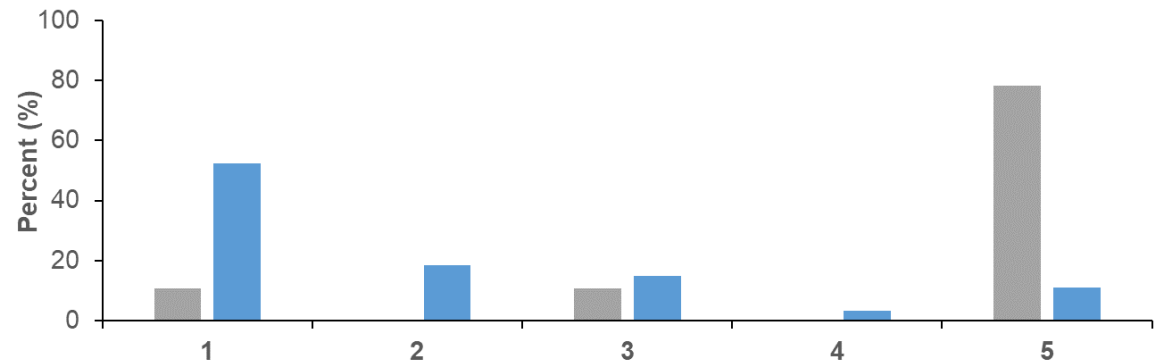


Public Comment: NC Wild Caught Shrimp

I prefer to purchase NC wild caught shrimp over farm raised or foreign imports.

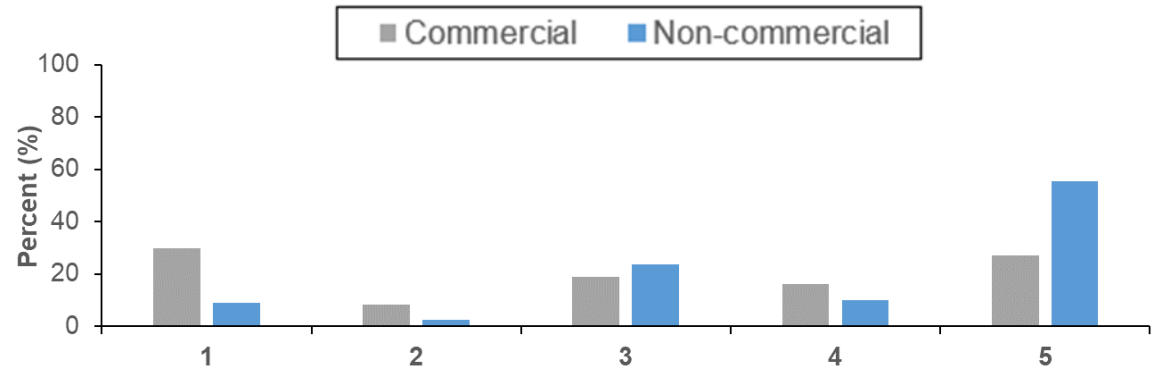


I am concerned about the availability of NC wild caught shrimp if new management is implemented.

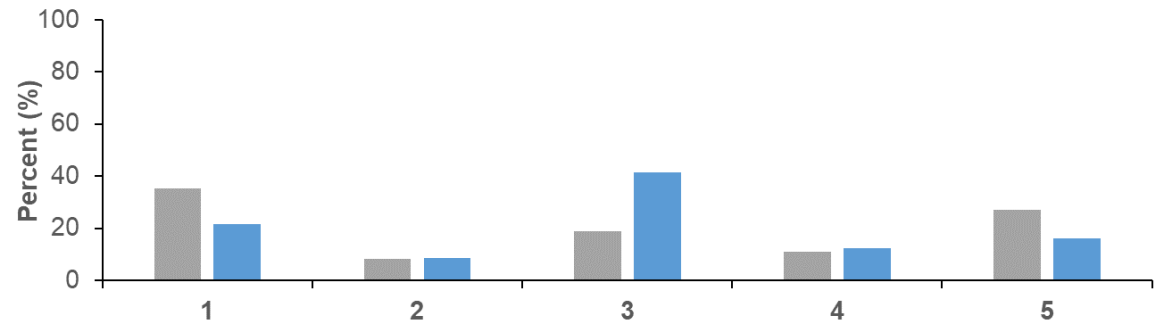


Public Comment: Managing Effort and Gear to Reduce Bycatch

Headrope limits should be used to limit effort in the shrimp trawl fishery.



Access should be given to non-trawl gear in trawl closure areas.

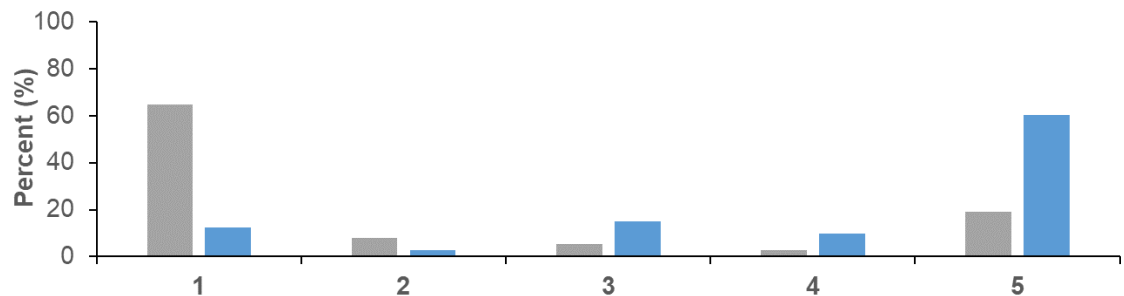
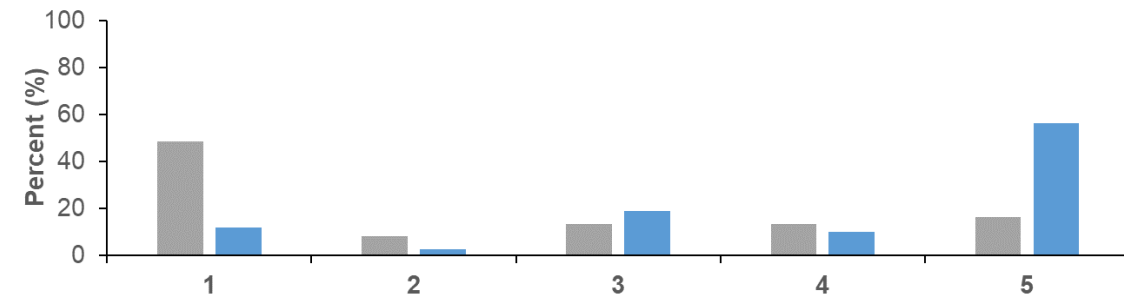
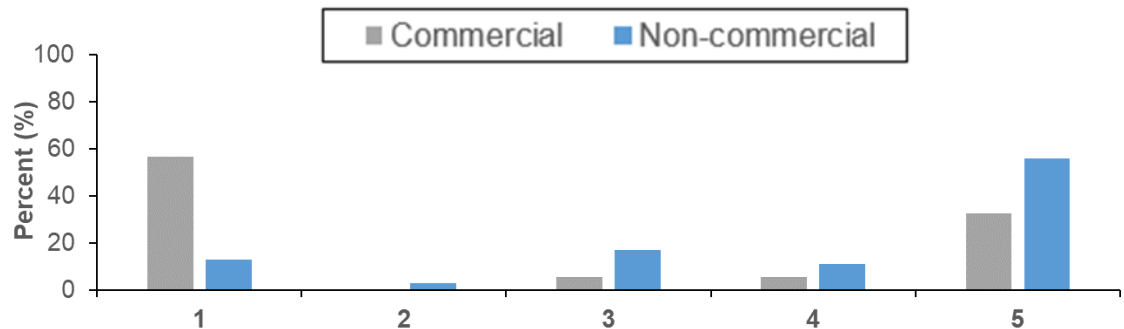


Public Comment: Managing Effort and Gear to Reduce Bycatch

Daily fishing times should be used to limit effort in the shrimp trawl fishery.

Tow times should be used to limit effort in the shrimp trawl fishery.

Trip limits should be used to limit effort in the commercial shrimp trawl fishery.

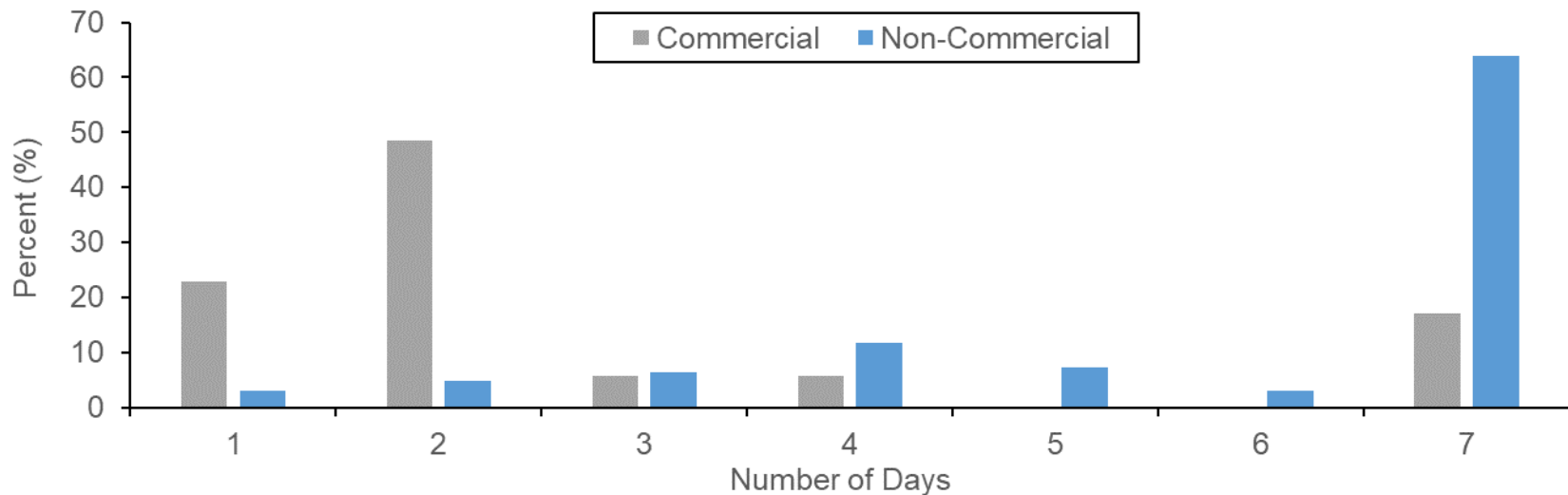
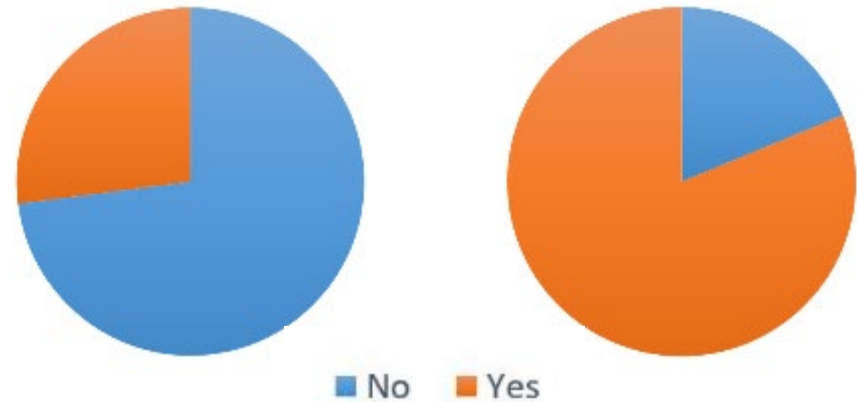


Public Comment: Managing Effort and Gear to Reduce Bycatch

Should the number of fishing days per week be reduced further?

Commercial

Non-Commercial



Public Comment: Managing Effort and Gear to Reduce Bycatch

Should the recreational cast net harvest limit in trawl closure areas be the same as the open area limit?

Commercial



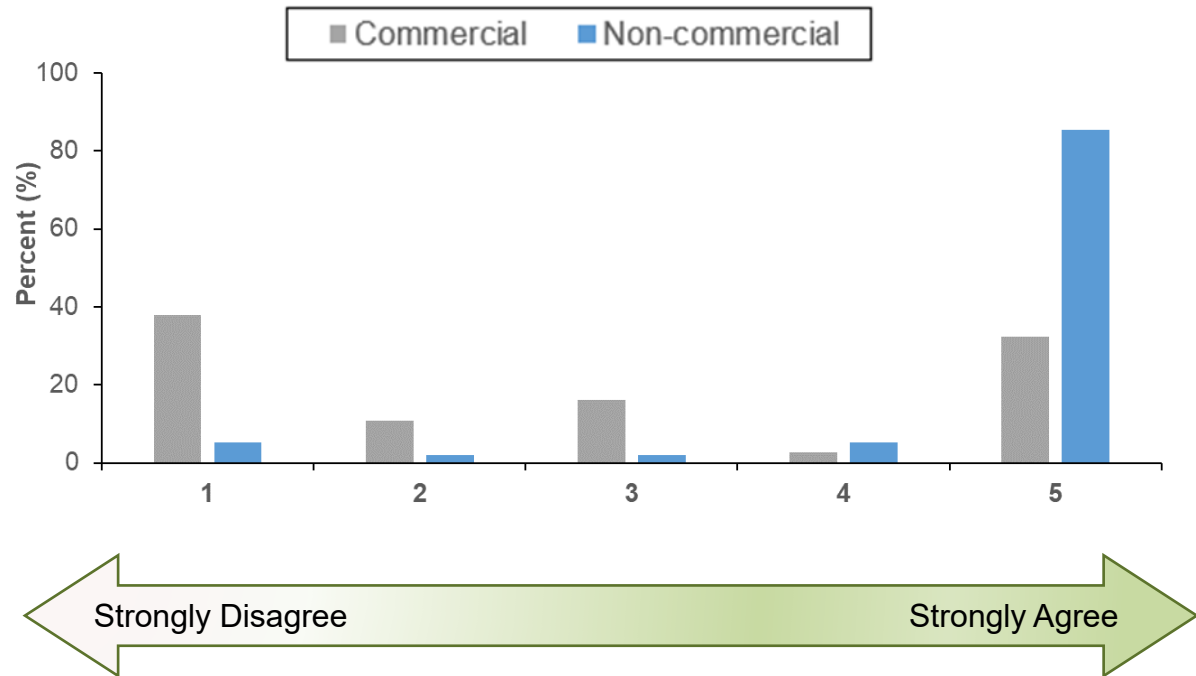
Non-Commercial



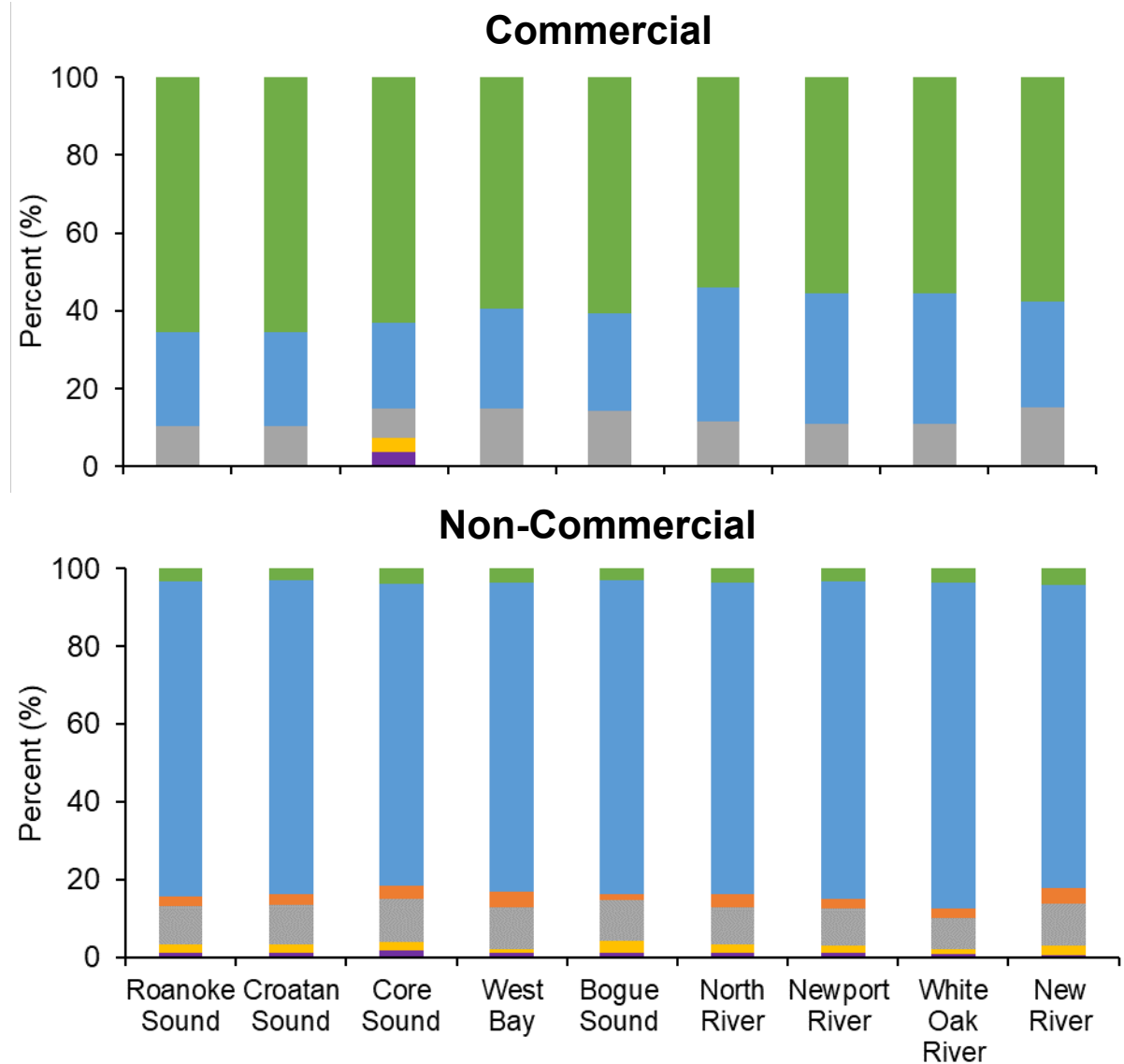
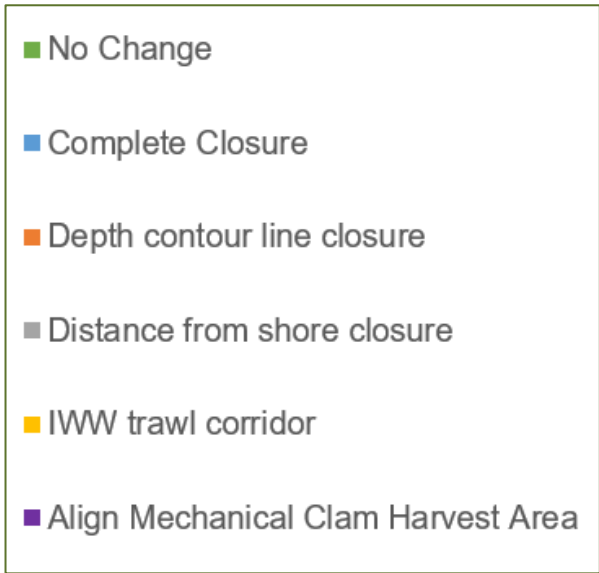
■ No ■ Yes

Public Comment: Shrimp Trawl Area Closures to Protect Critical Habitat

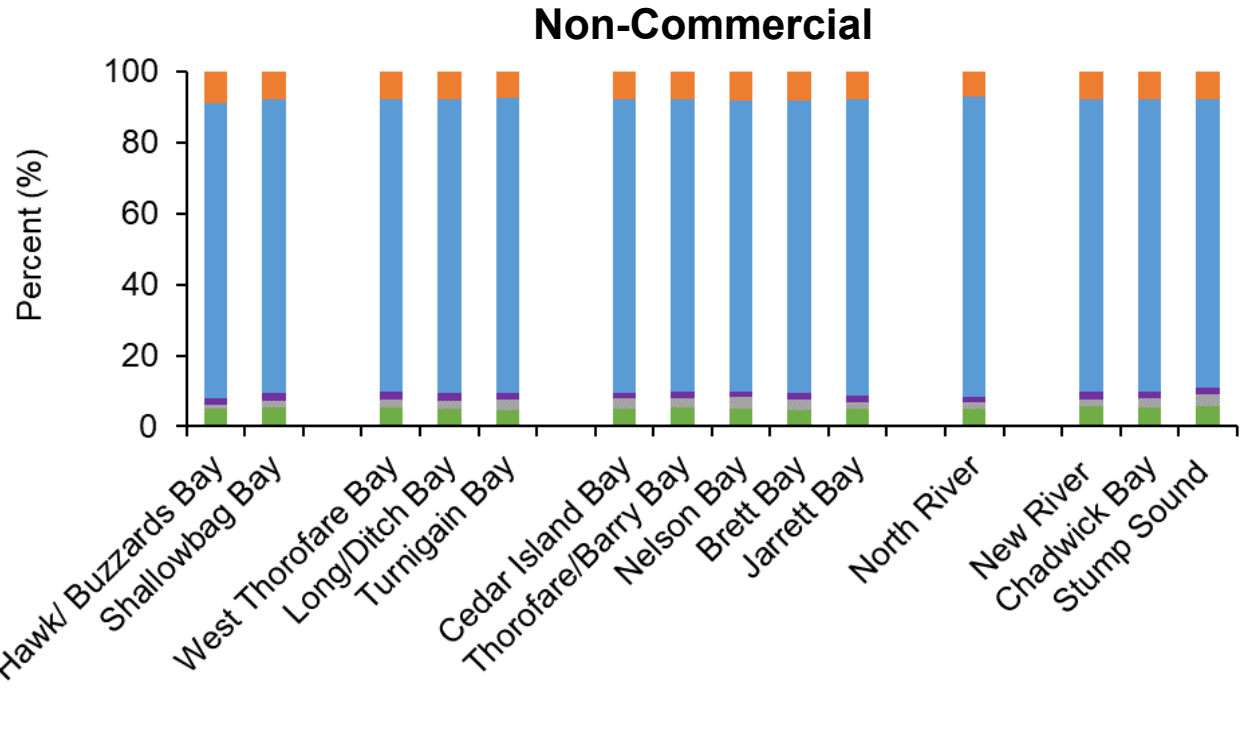
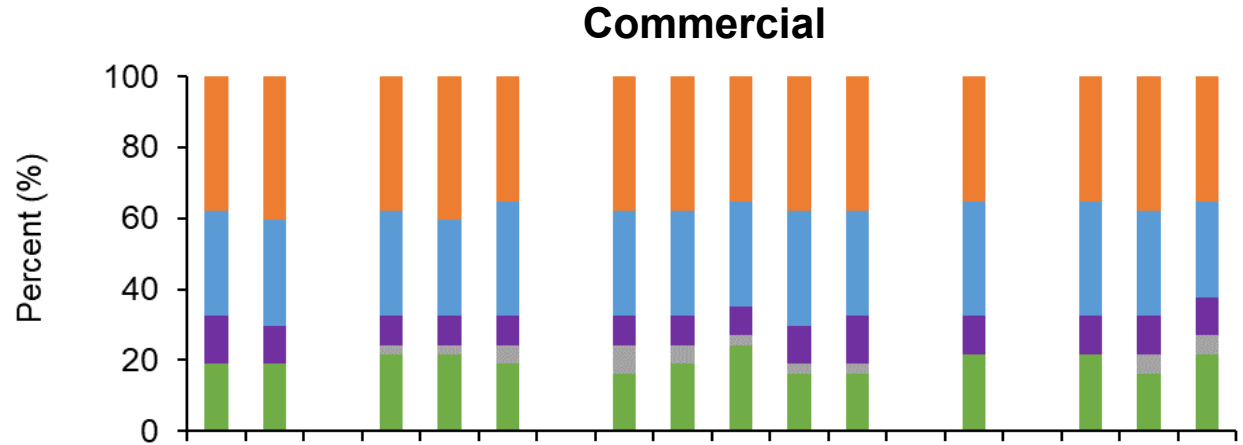
Shrimp trawl area closures are an effective approach to habitat protection.



Public Comment: Shrimp Trawl Area Closures to Protect Critical Habitat

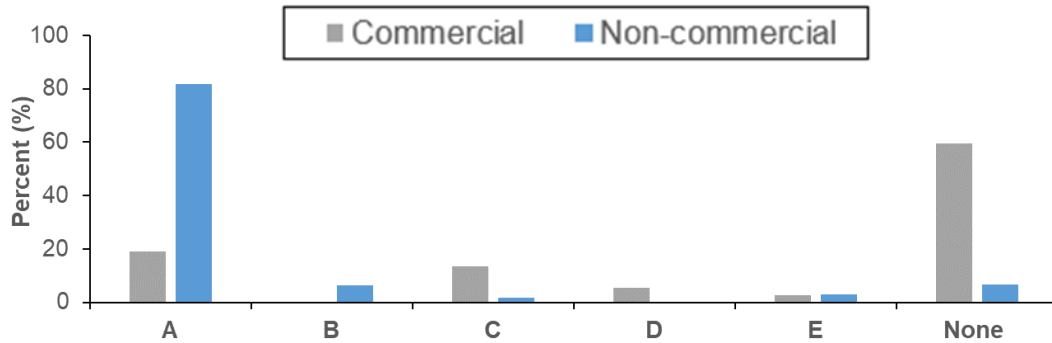


Public Comment: Special Secondary Nursery Areas

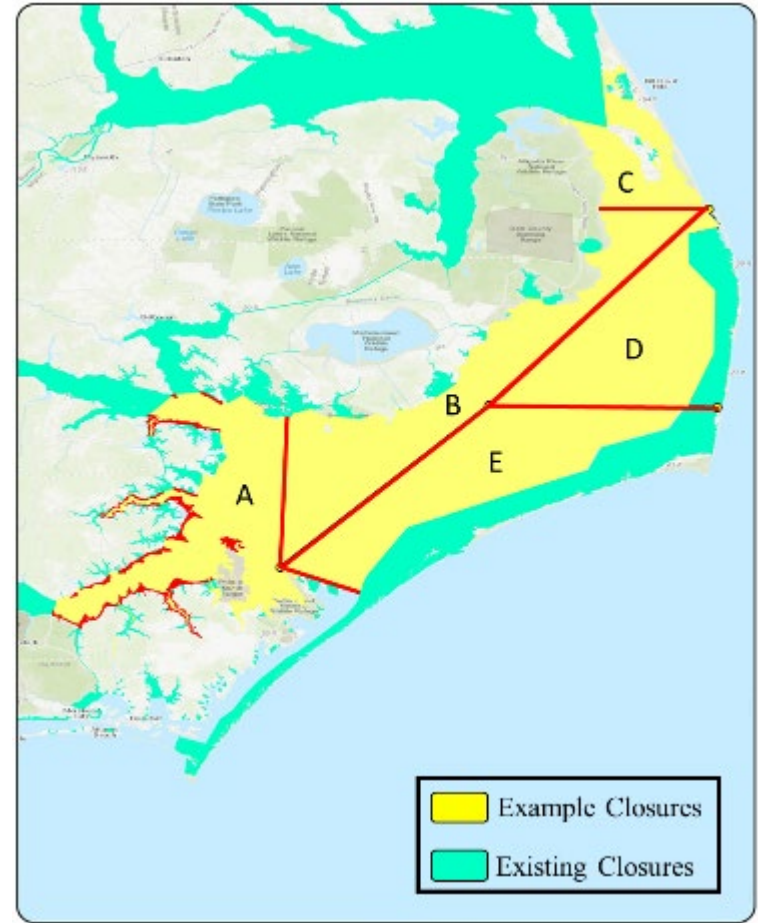
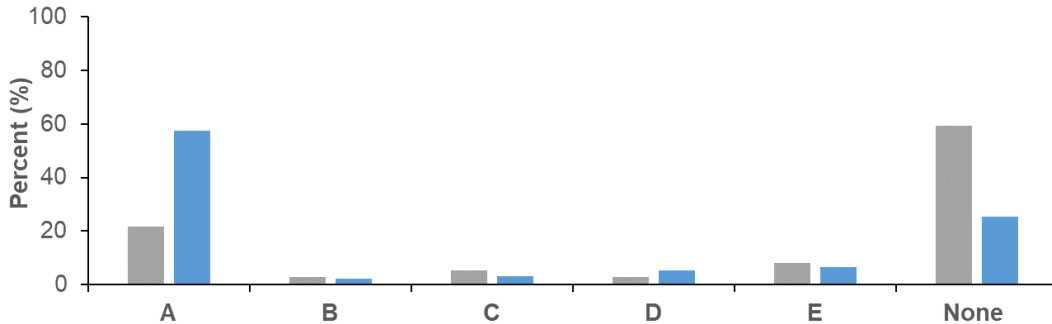


Permanent and Seasonal Area Closures

Which area(s) in the map do you support becoming permanently closed in the Pamlico Sound region?



Which area(s) in the map do you support becoming seasonally closed in the Pamlico Sound region?



Example Closures

Advisory Committee Recommendations

- Northern Regional
- Southern Regional
- Finfish Standing
- Habitat & Water Quality Standing
- Shellfish / Crustacean Standing



Protection of Critical Sea Grass and Shell Bottom Habitats

Northern

- Remain at status quo

Habitat & Water Quality

Align shrimp trawling areas with mechanical clam harvest areas in Core Sound and North River and allow trawling in Straits Channel of Core Sound.

- Supports management strategies for protection of SAV and shell bottom habitat from trawling impacts.
- Amend the current document to include a formal decision analyses for the options presented in the FMP and other options discussed during the Habitat and Water Quality AC meeting.

Southern, Finfish, and Shellfish/Crustacean

- No motion passed
- All noted the importance of these habitats and their protection

Shrimp Management in SSNAs

Southern

- Change the designation of "all SSNA[s] listed to SNA[s]"

Northern, Finfish, Shellfish/Crustacean, and Habitat & Water Quality

- No motion or recommendation

Reducing Shrimp Trawl Bycatch Through Area Closures

Southern

- Supports no additional area closures without supporting information to inform those closures.

Shellfish / Crustacean

- Does not agree with closing all internal waters.
- Does not agree with any additional seasonal closures in internal waters.

Northern, Finfish, Shellfish/Crustacean, and Habitat & Water Quality

- No motion or recommendation

Managing Effort and Gear to Reduce Bycatch

Northern

- Cannot support these options because there are no quantifiable data or targets to apply to the options.

Southern

- Cannot support these options because there are no quantifiable data or targets to apply to the options.
- Recommends the MFC support focused studies on the effects of effort and gear restrictions on bycatch.

Finfish

- Continue to work toward bycatch reduction with gear modification and devices with industry input taking the lead with the support of the division.
- Strongly encouraging the DMF to enhance data collection to obtain the data to be able to better quantify bycatch in the shrimp trawl fishery, and its impacts on the populations of concern

Shellfish / Crustacean

- Continue to work toward bycatch reduction with gear modification and devices with industry input taking the lead with the support of the division.

Habitat & Water Quality

- No motion or recommendation

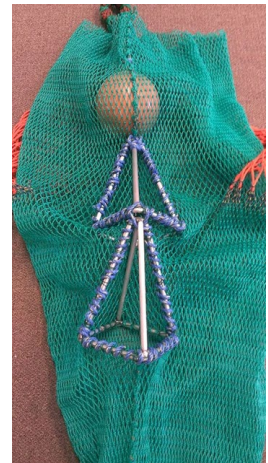
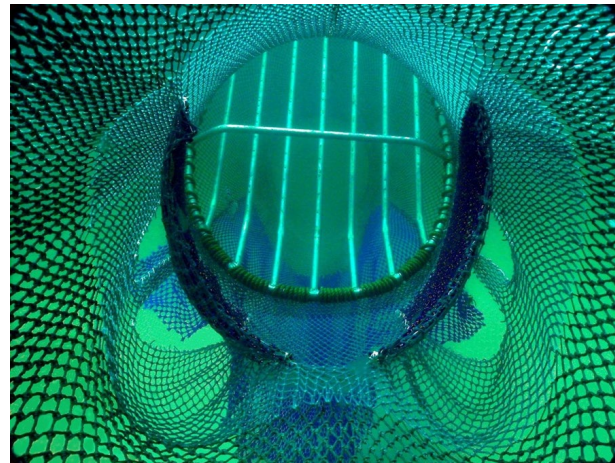
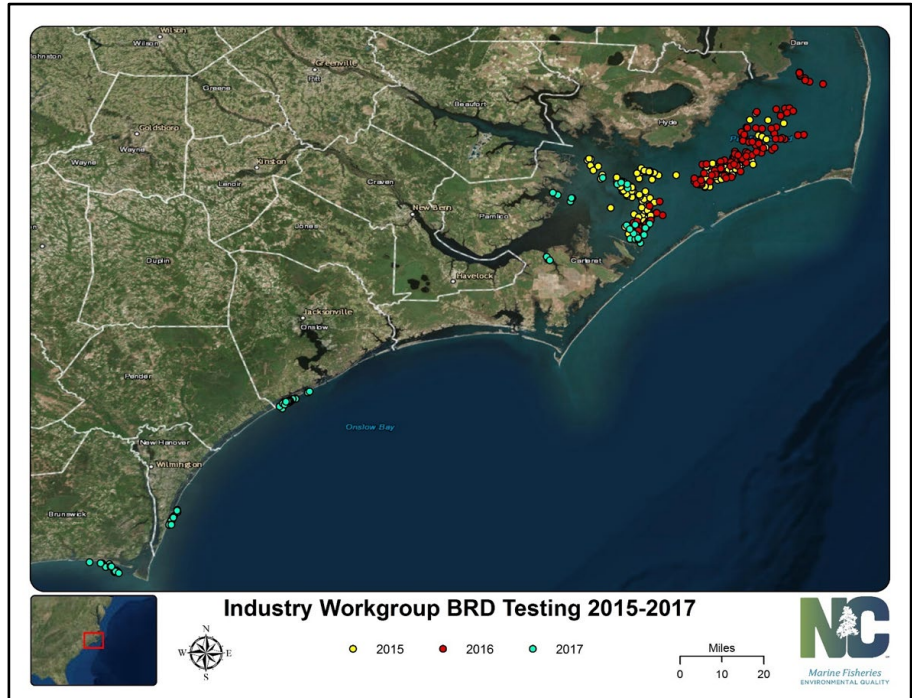
Bycatch Reduction Device Testing

Industry Workgroup Testing

- Pamlico Sound & Atlantic Ocean: 2015-2017
- **Finfish bycatch reduced by 40.1% to 57.2%**
- Required in inside waters where up to 220 ft of headrope allowed (effective July 1, 2019)

Additional Testing

- Atlantic Ocean: 2019
- **Finfish bycatch reduced by 52.0%**
- Outreach completed in 2021
- Required use in ocean waters in 2022.



Amendment 2

Amendment 2 - Background

- Developed to address an August 2018 MFC motion
- Focus on management to further reduce bycatch and provide protection for critical habitat
- Four issue papers addressing
 - Habitat protections
 - Special secondary nursery areas
 - Area restrictions
 - Effort and gear management
- Shrimp trawl bycatch information paper
- No statutory requirement regarding the status of shrimp stocks
- Status quo will not meet the goal and objectives

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 Coastal Habitat Protection Plan (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

Amendment 2 – Goal and Objectives

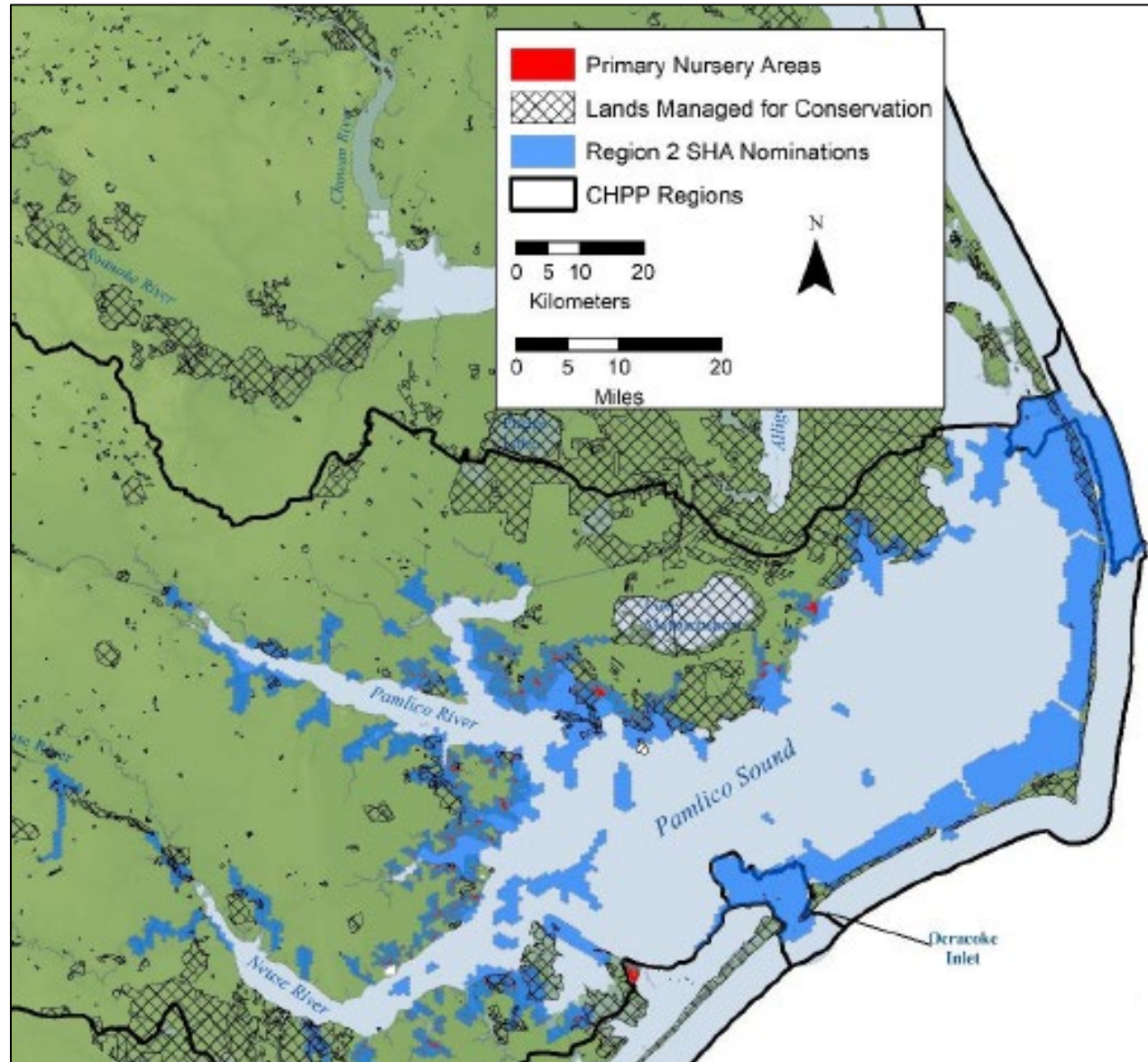
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Strategic Habitat Areas (SHAs)

- CHPP
 - Identify SHAs
 - Focus habitat and water quality protection
- SHA nominations have been completed
- Verification is underway but will take time



Nursery Area Designation

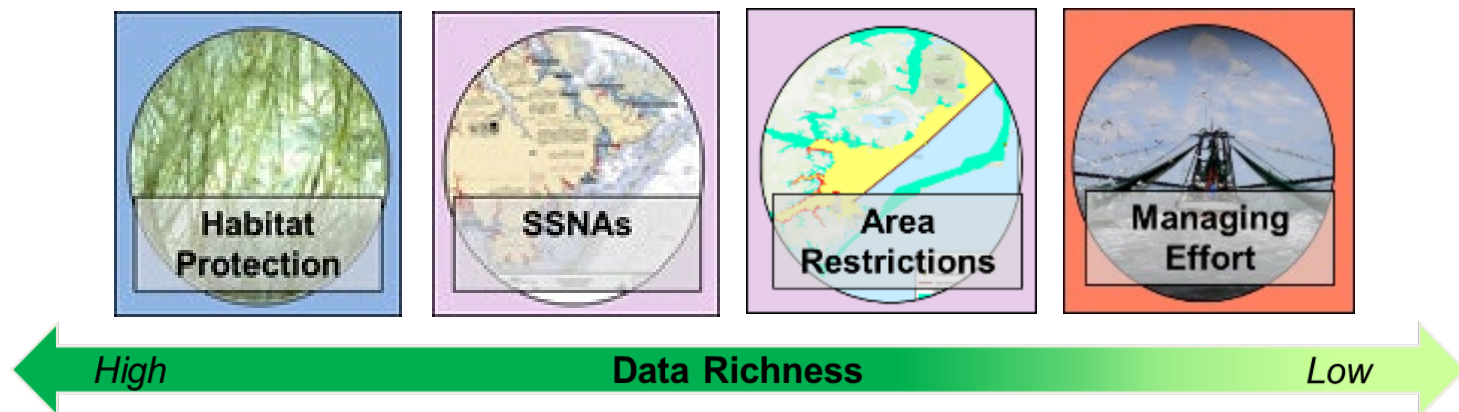
- Proportional contribution to adult populations
 - Evaluate growth, survival, predator protection movement to adult habitats
 - Abiotic factors, habitat, and landscape position
- Work to evaluate criteria for nursery habitat designation that are empirically testable given logistical constraints
- Can immediately address bycatch and habitat concerns using existing management tools



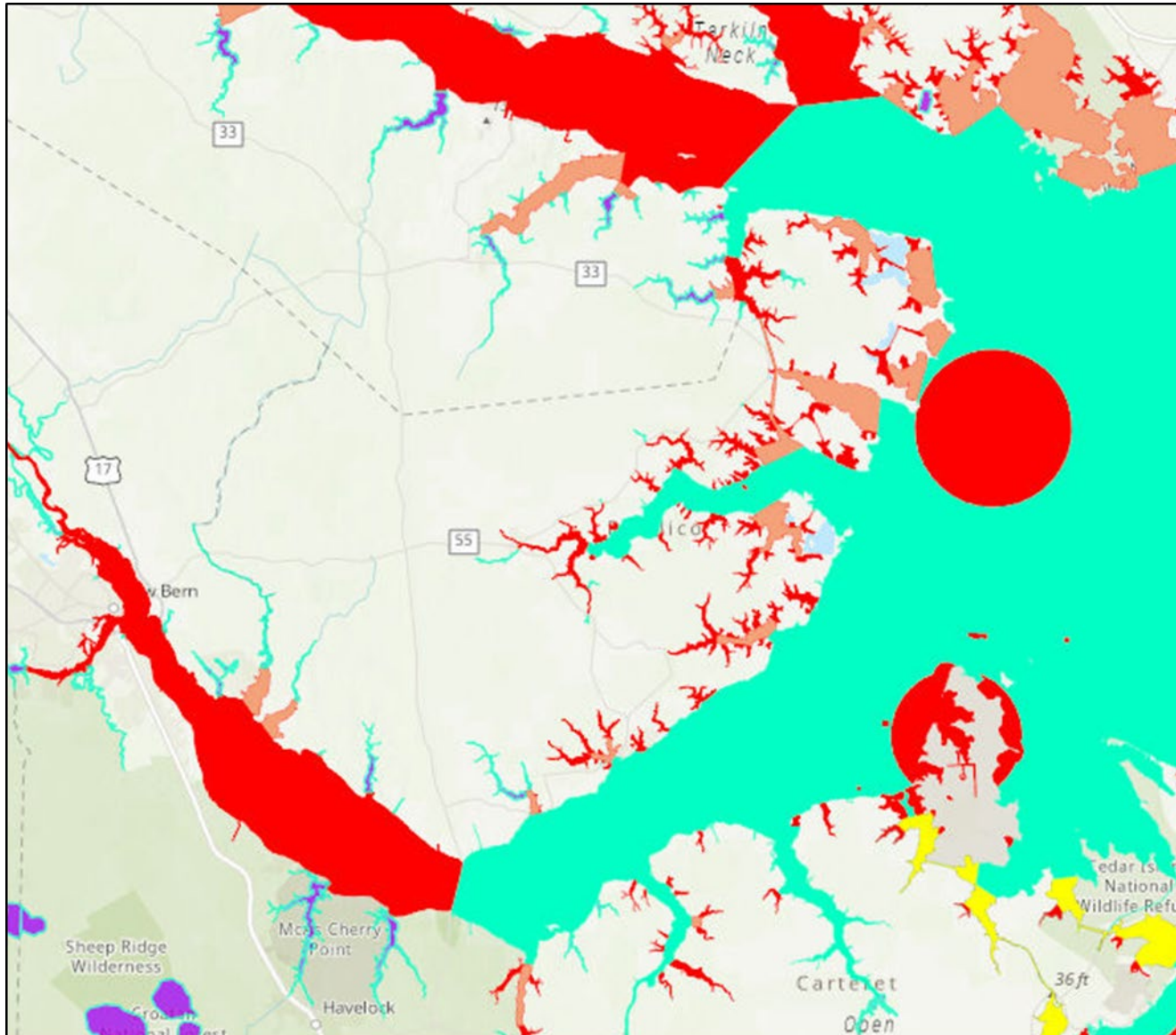
*Division of Marine
Fisheries
Recommendations*

Amendment 2 – Recommendation Rationale

- Reviewed best available science and potential impacts of various management options to the resource and various user groups
- Stock assessments and FMPs for Atlantic croaker, spot, weakfish, and southern flounder do not provide specific recommendations for shrimp trawl bycatch reduction
- Recommendations primarily influenced by options with more supporting data and existing research
- Habitat protections, bycatch reduction and resource access considered for each area
- Continued BRD use strongly considered an effective method of bycatch reduction while continuing to allow access



Connectivity



State-wide Recommendations

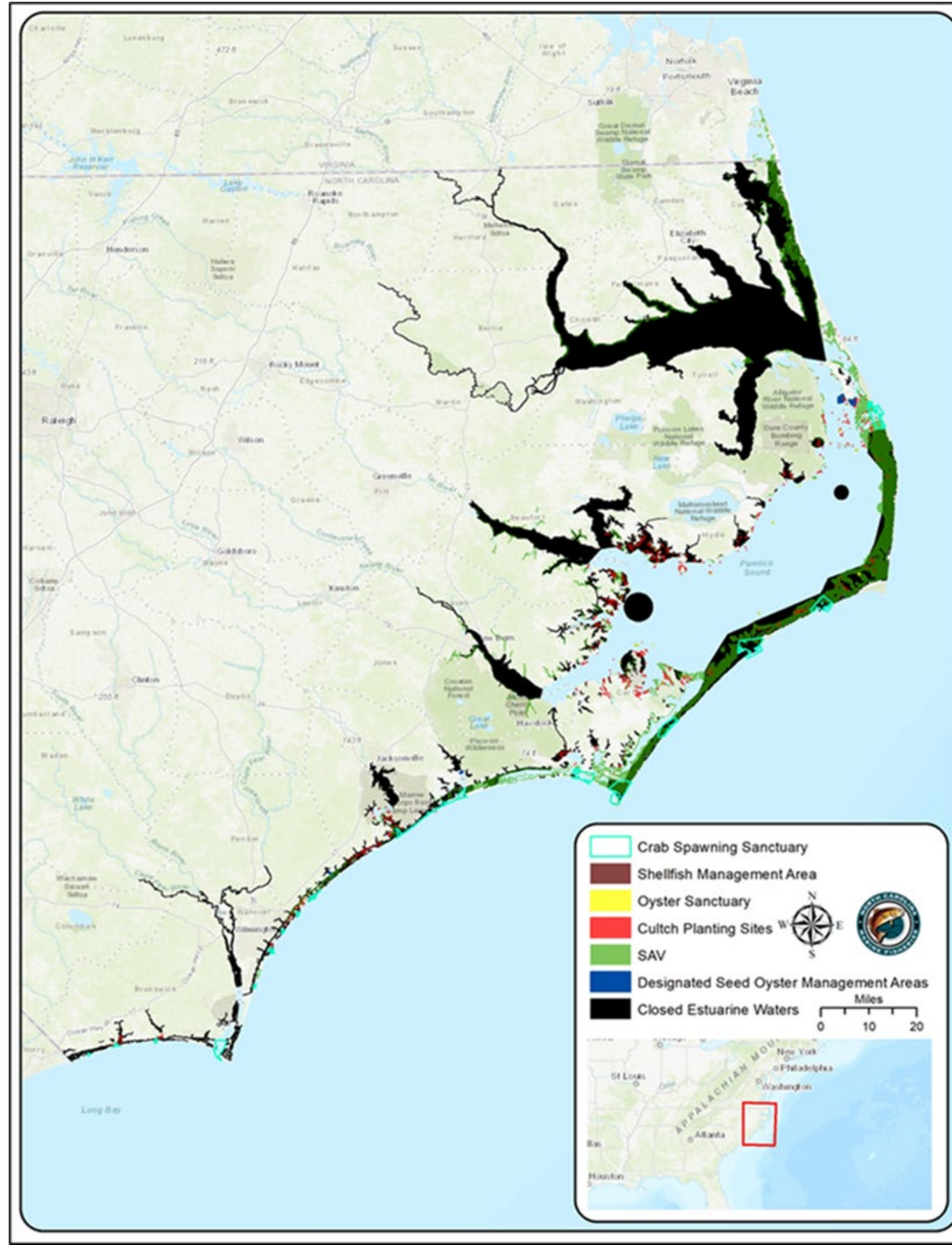
Effort and Gear Modifications

- Maintain existing headrope limits
- Implement headrope restrictions via proclamation as necessary to address user conflict
- Allow non-trawl gears to harvest shrimp in areas closed to shrimp trawling
- Make recreational cast net creel limit consistent across waterbodies

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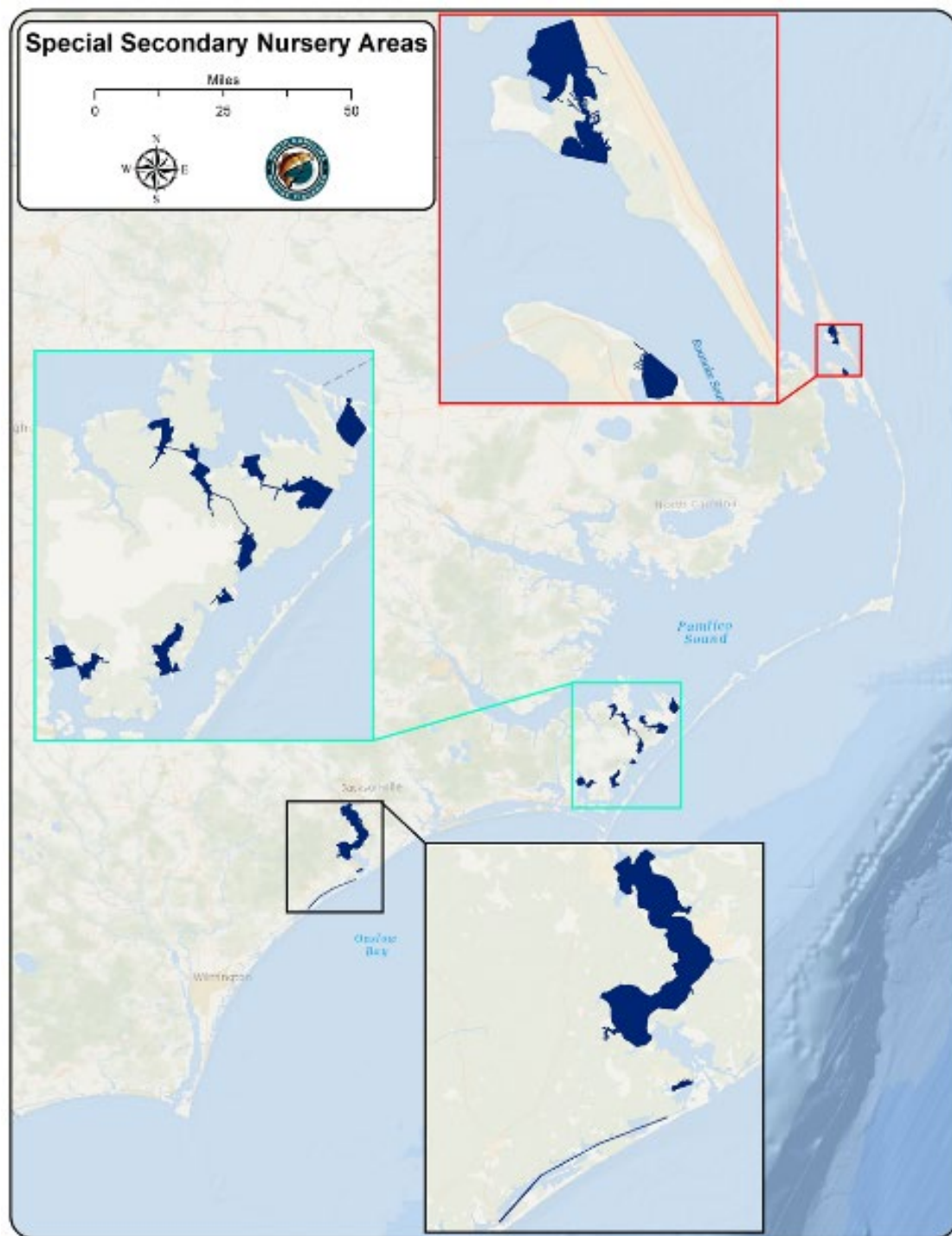
Area Closures

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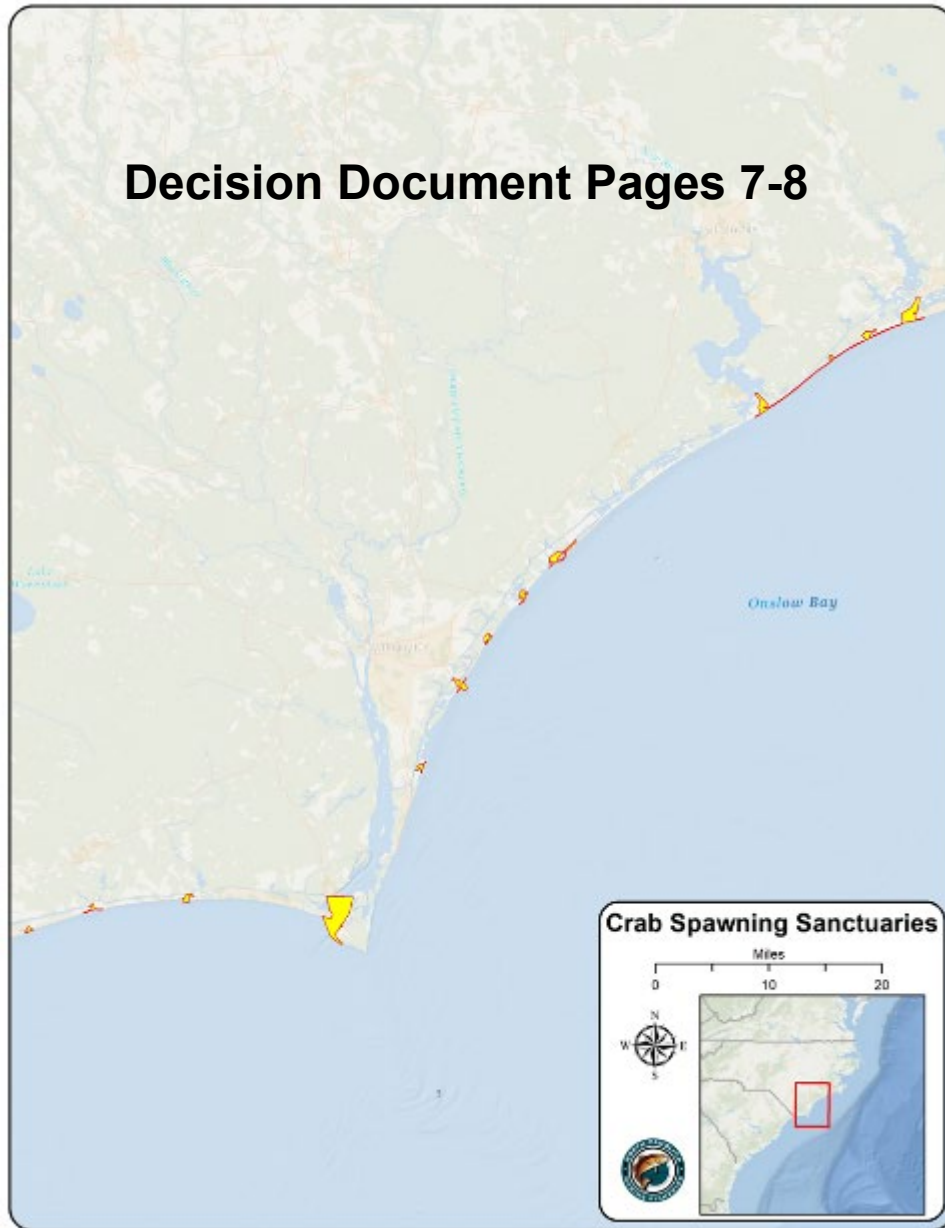


Special Secondary Nursery Areas

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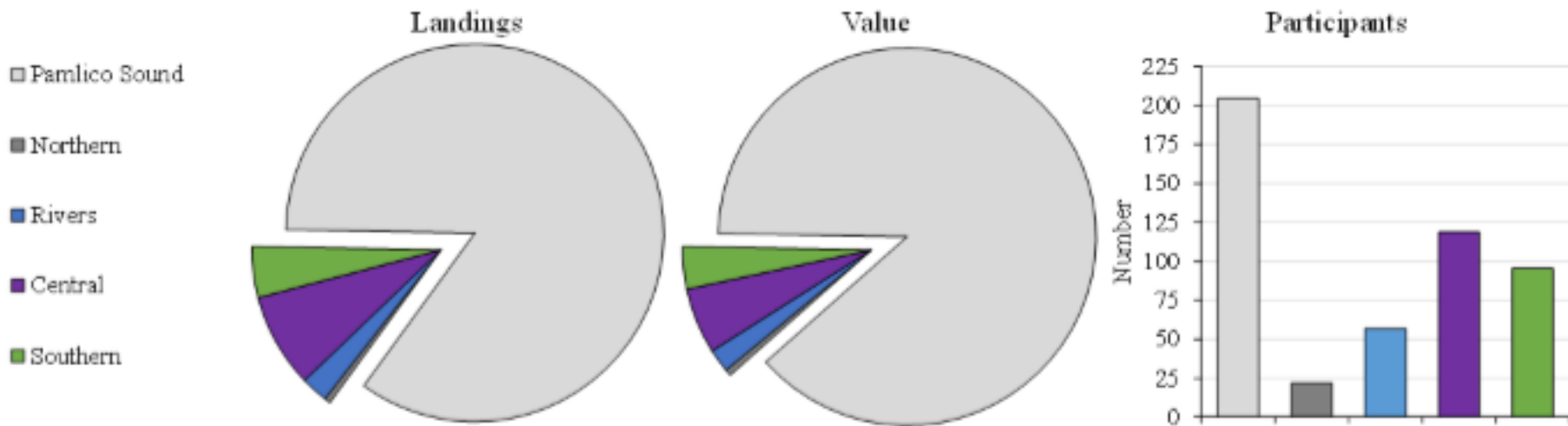
Crab Spawning Sanctuaries



Region-Specific Recommendations

Northern Region

Pamlico Sound, Roanoke Sound, Croatan Sound, Pamlico River, Bay River, Neuse River

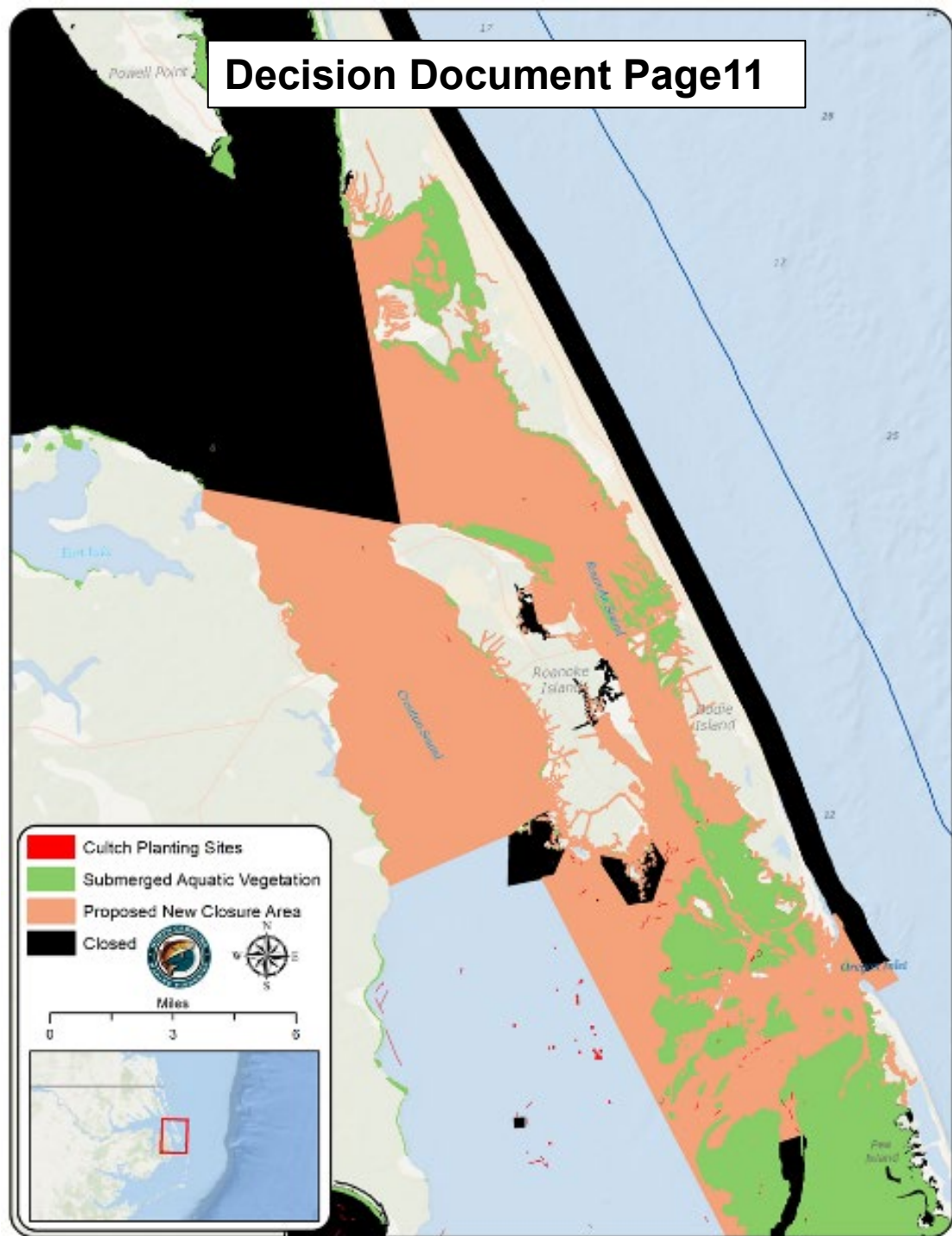
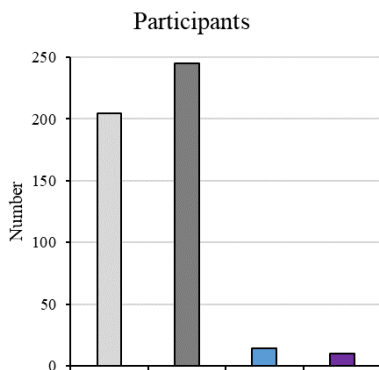
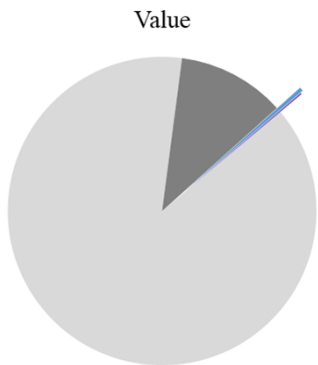
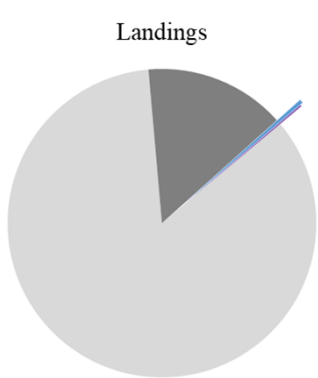


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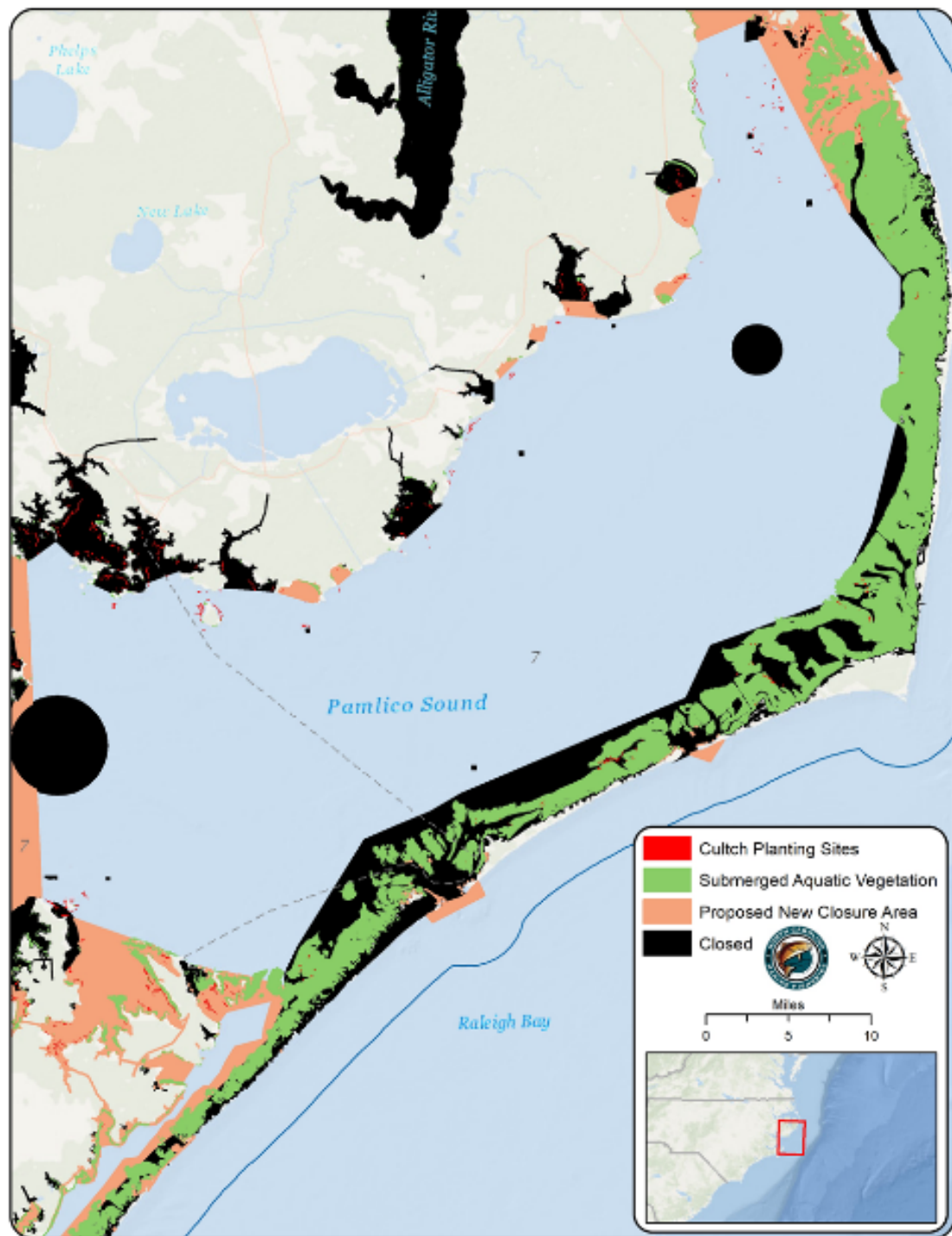
Northern Region – Croatan and Roanoke Sounds

- Pamlico Sound
- Rest of State
- Croatan Sound
- Roanoke Sound

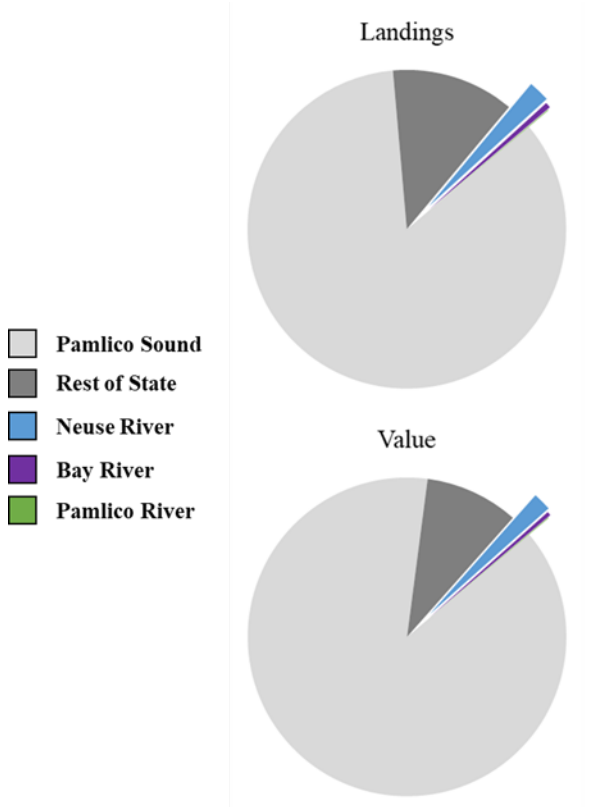


Northern Region – Pamlico Sound and Adjacent Bays

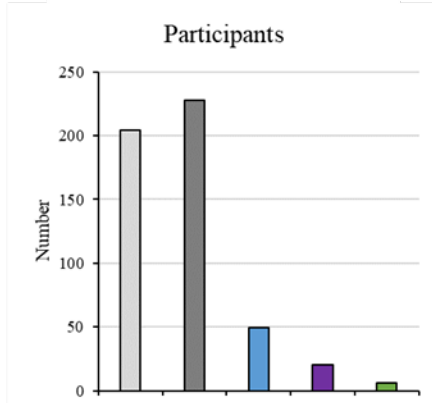
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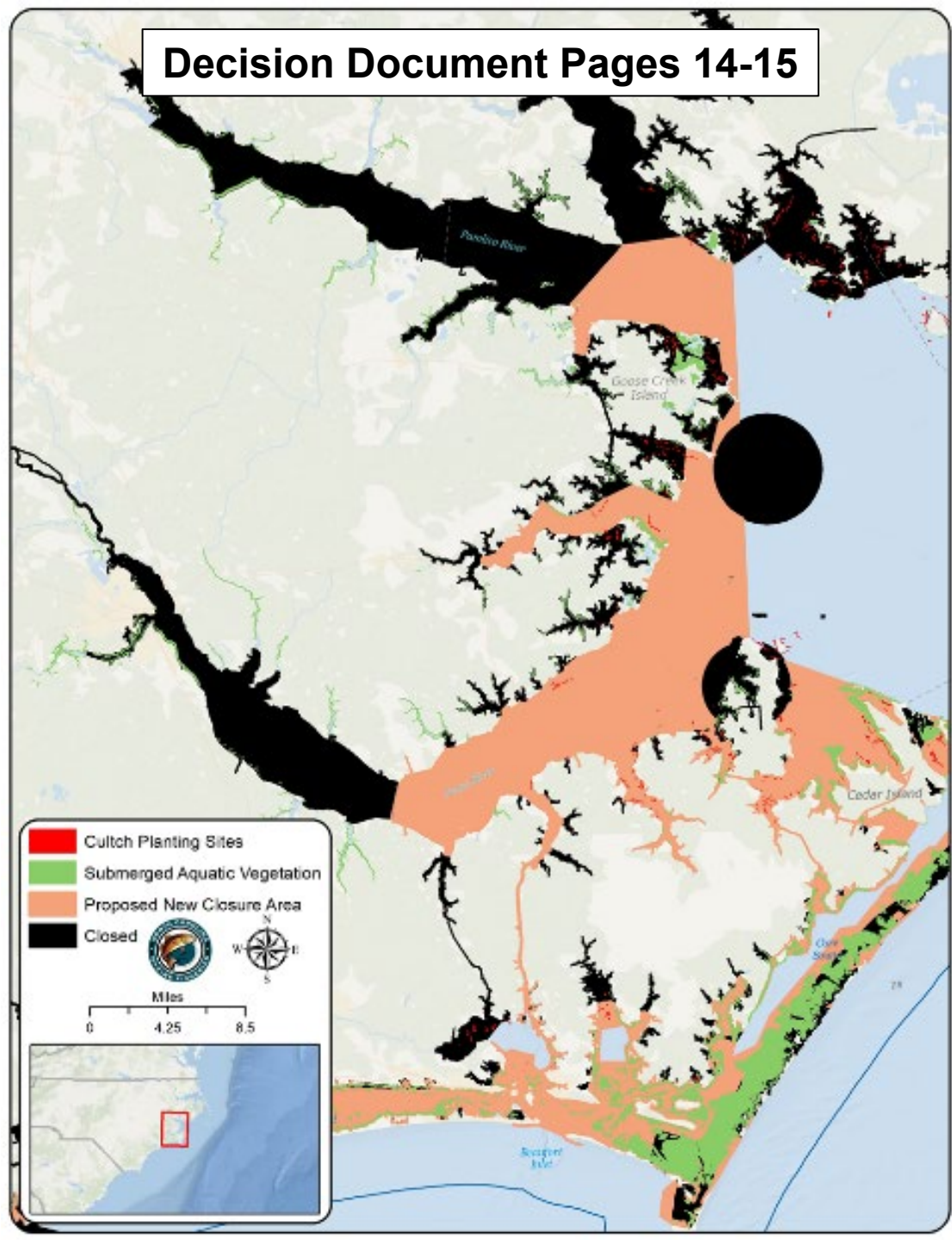
Northern Region - Pamlico, Bay, & Neuse Rivers and West Bay



- Pamlico Sound
- Rest of State
- Neuse River
- Bay River
- Pamlico River



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Central Region

Core Sound, North River, Back Sound, Newport River, Bogue Sound, White Oak River

□ Pamlico Sound

■ Rest of State

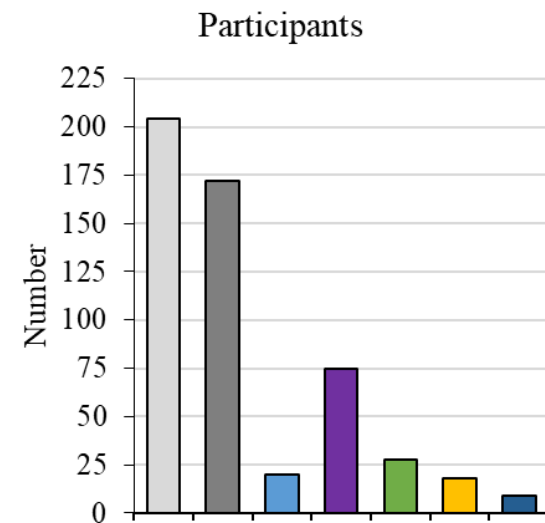
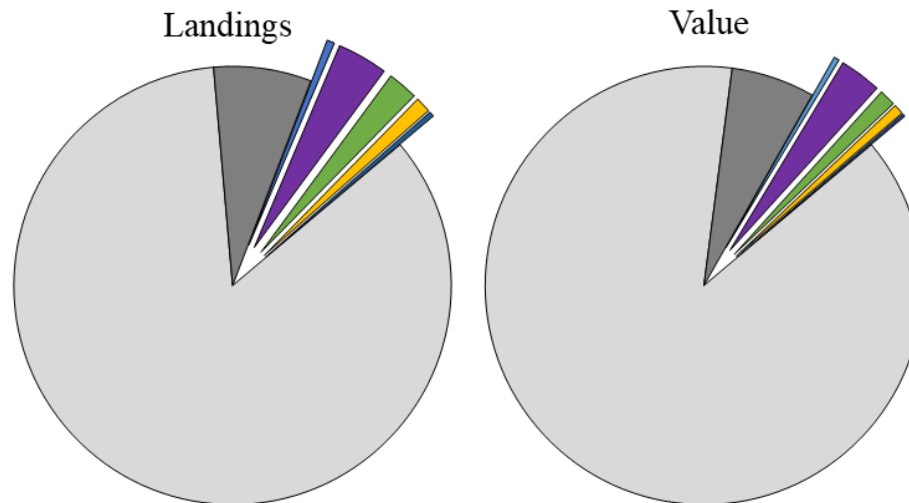
■ Bogue Sound

■ Core Sound

■ Newport River

■ North River/Back Sound

■ White Oak River

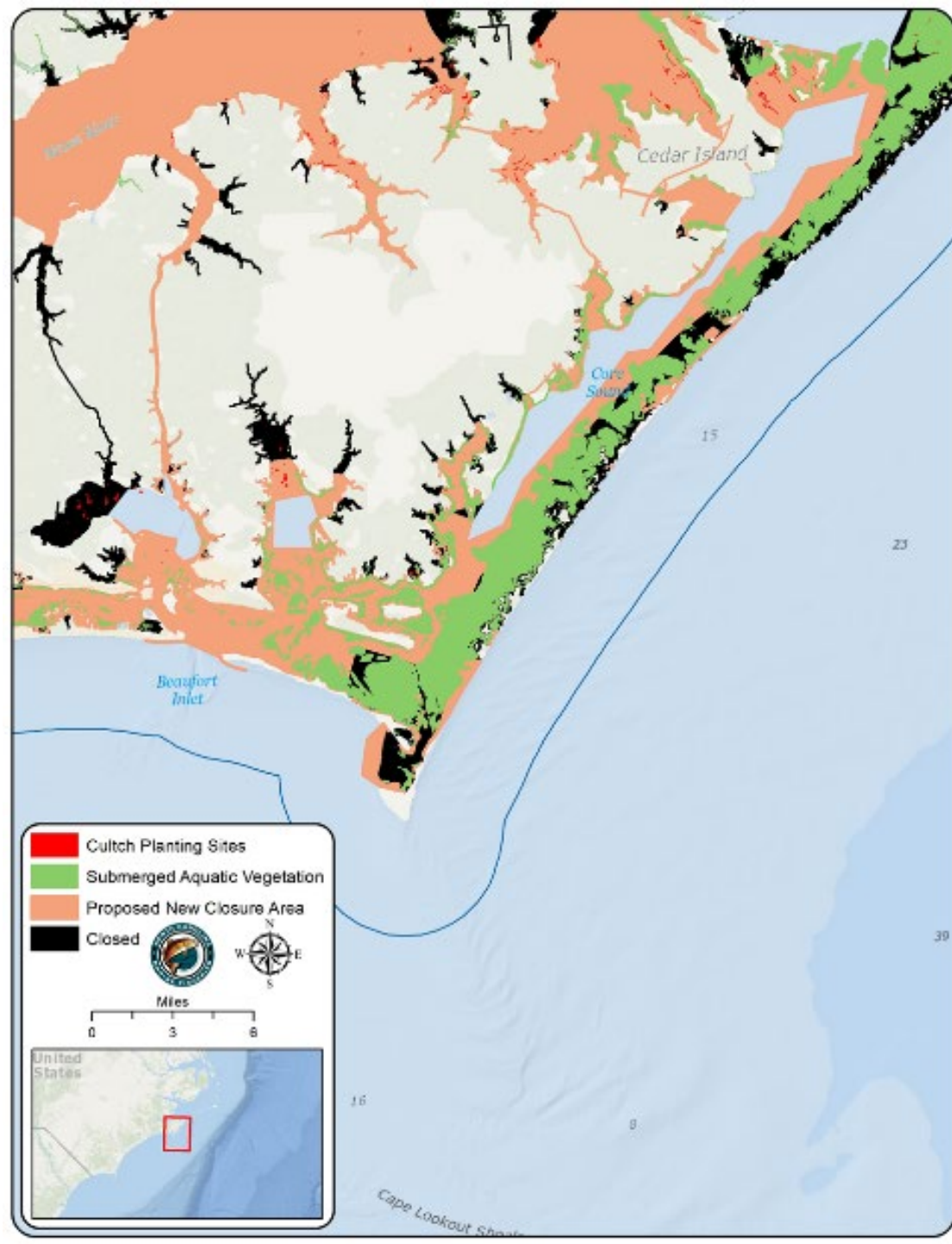


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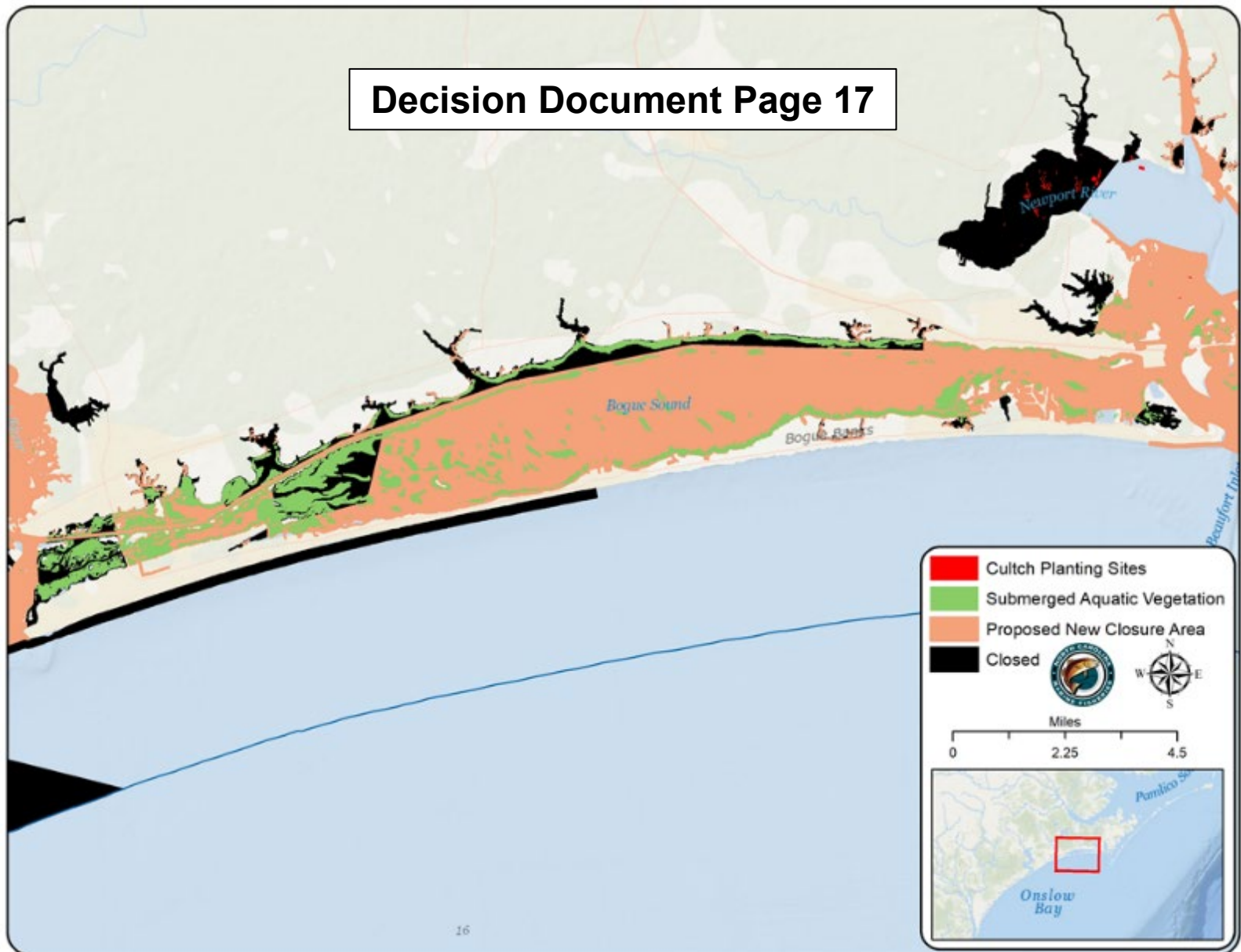
*Central Region –
Core Sound, North
& Newport rivers*

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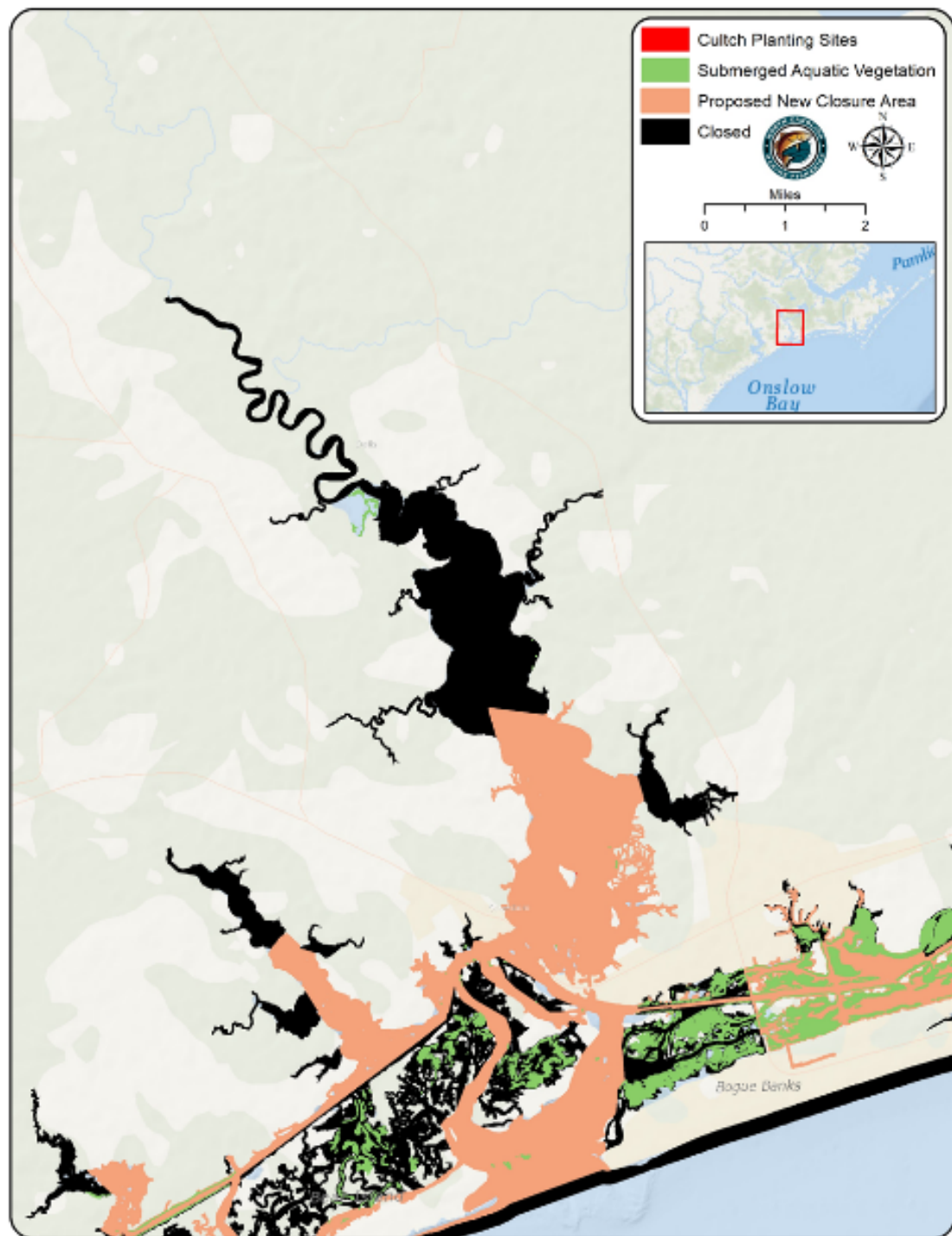
Central Region – Bogue Sound

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Central Region – White Oak River

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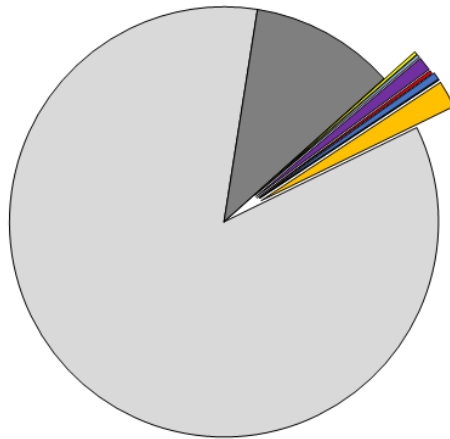


Southern Region

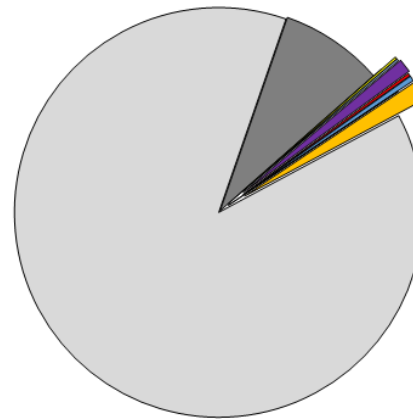
South of White Oak River

- Cape Fear River
- IWW - Brunswick
- IWW - Onslow
- Lockwood Folly
- Masonboro Sound
- New River
- Pamlico Sound
- Rest of State
- Shallotte River
- Stump Sound
- Topsail Sound

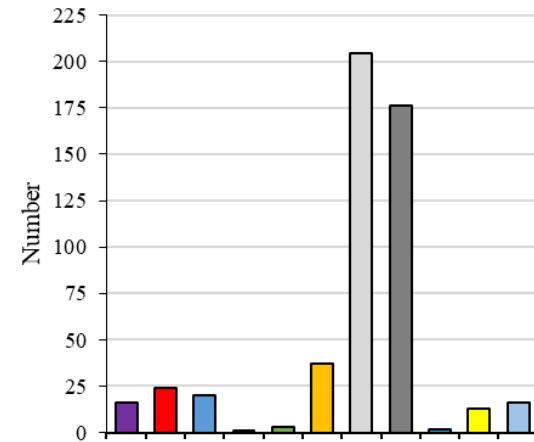
Landings



Value



Participants

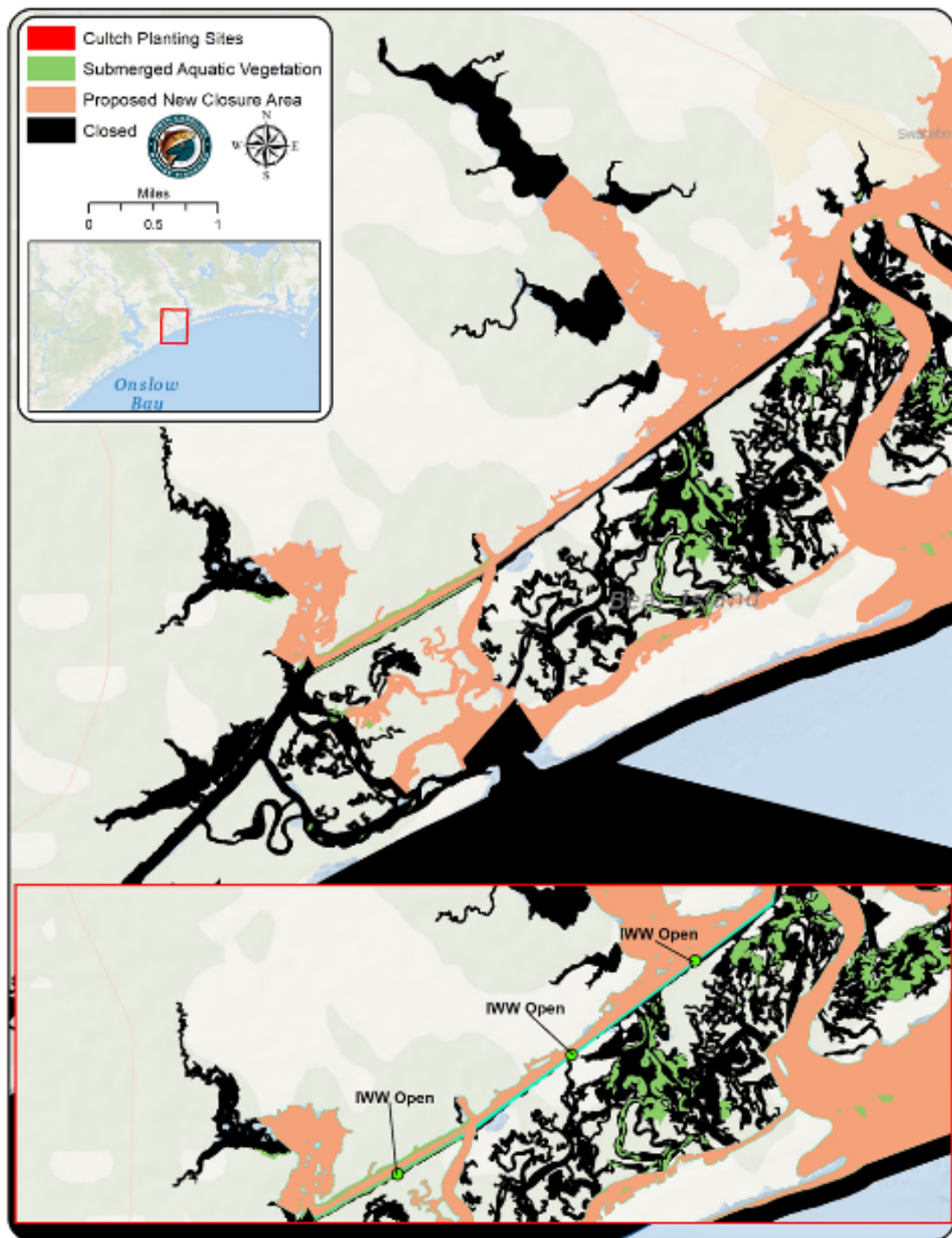


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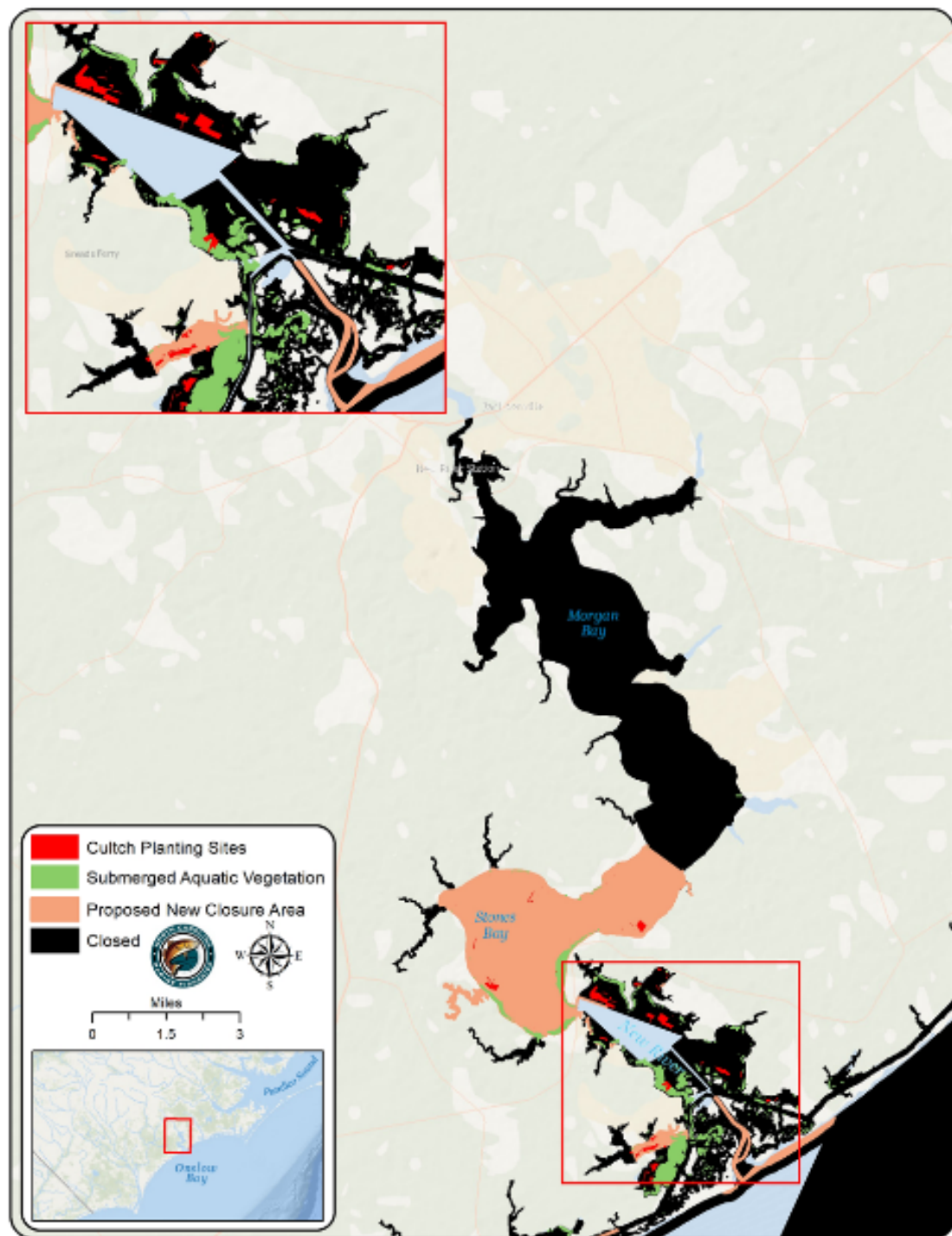
Southern Region – Queens and Bear Creek

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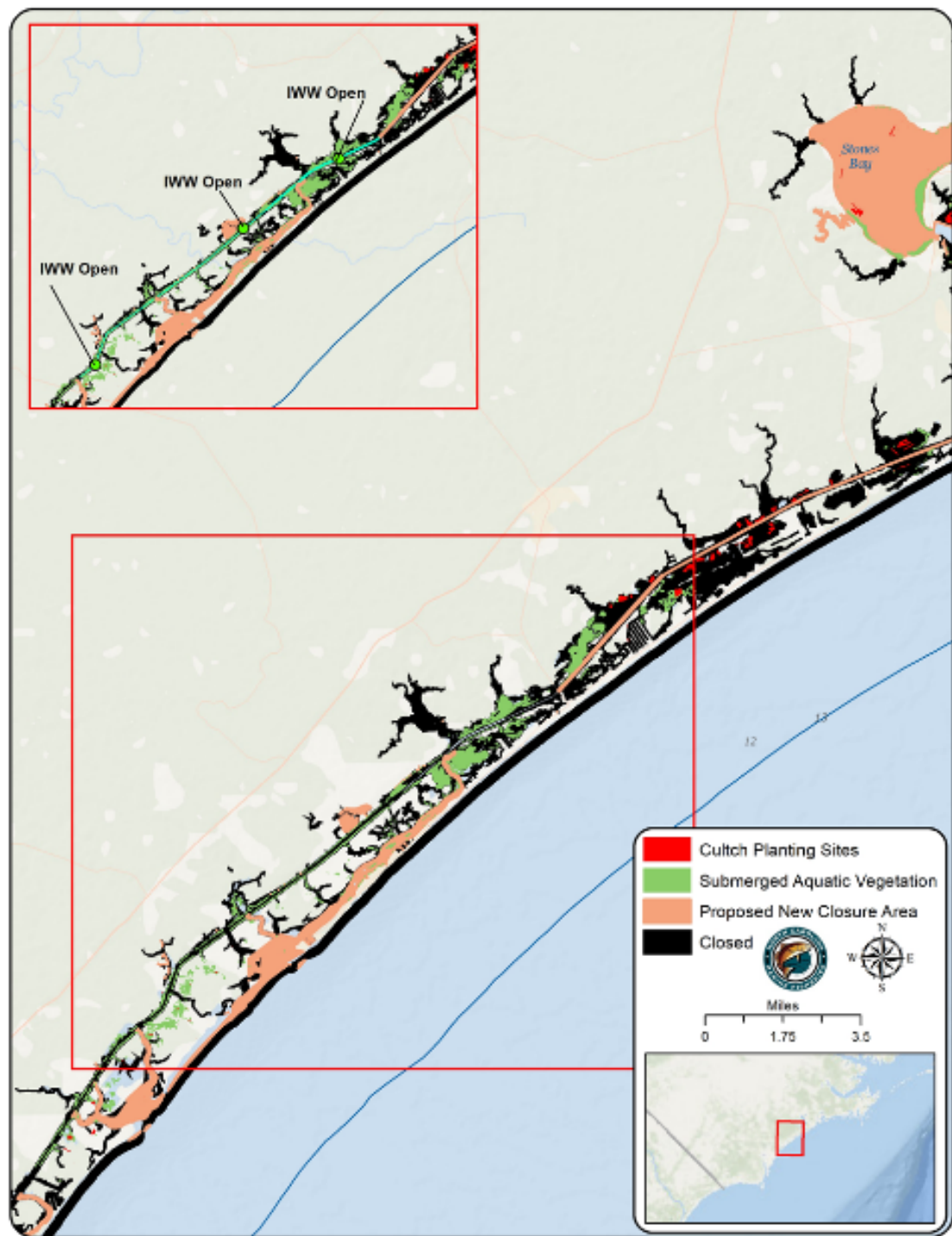
Southern Region – New River and Chadwick Bay

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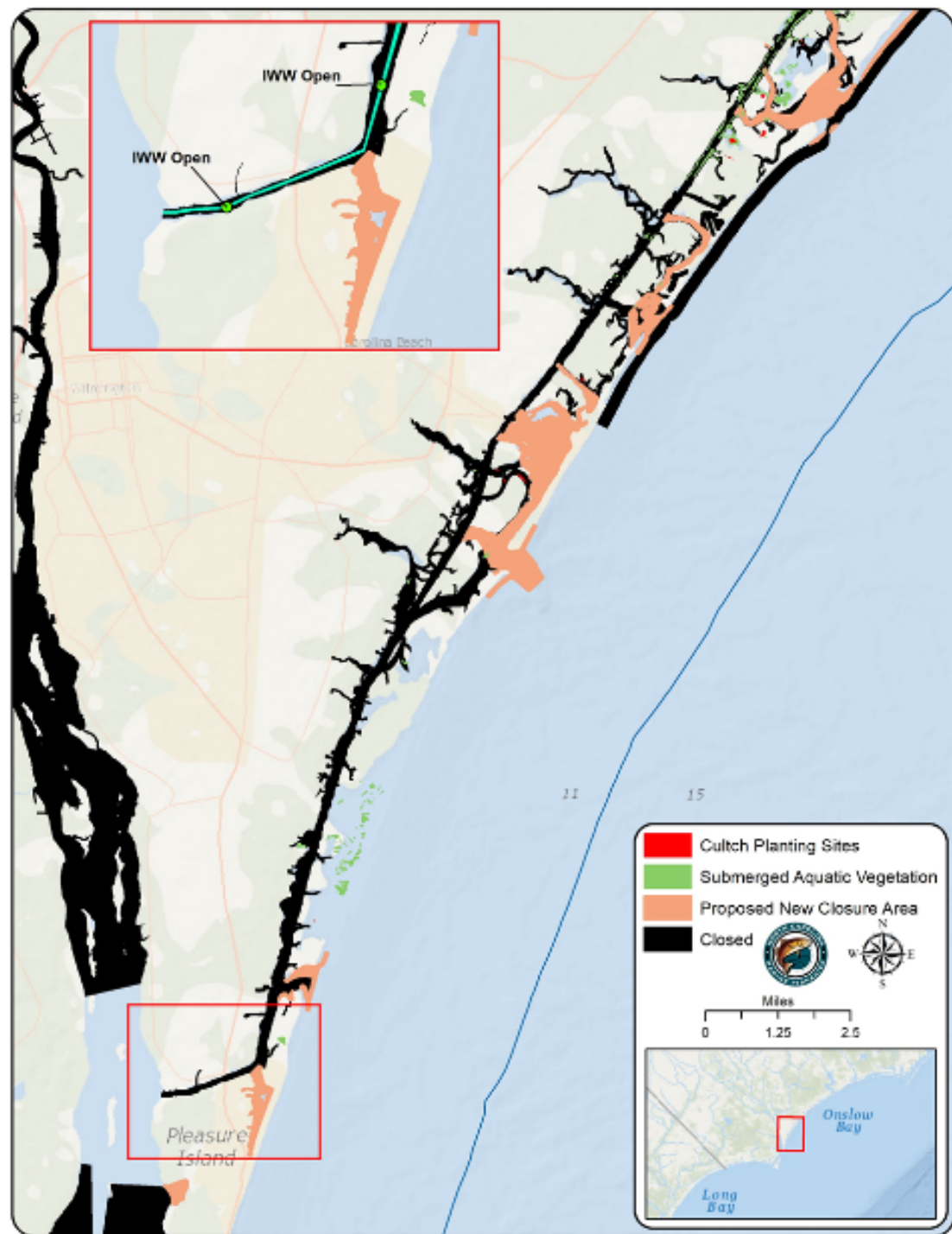
Southern Region – New River to Rich Inlet

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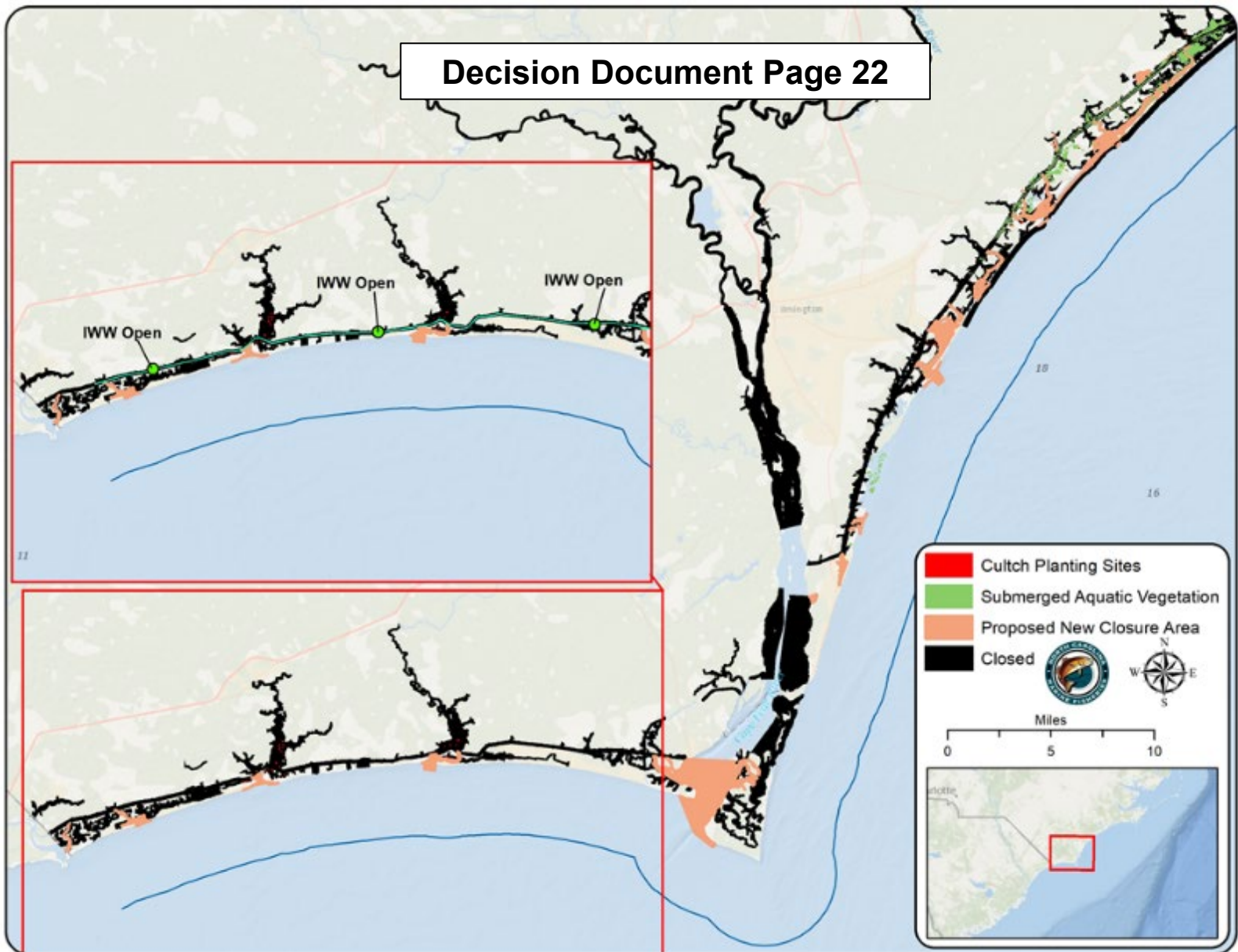
Southern Region – Rich Inlet to Carolina Beach Inlet

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Southern Region – Cape Fear River and Brunswick County

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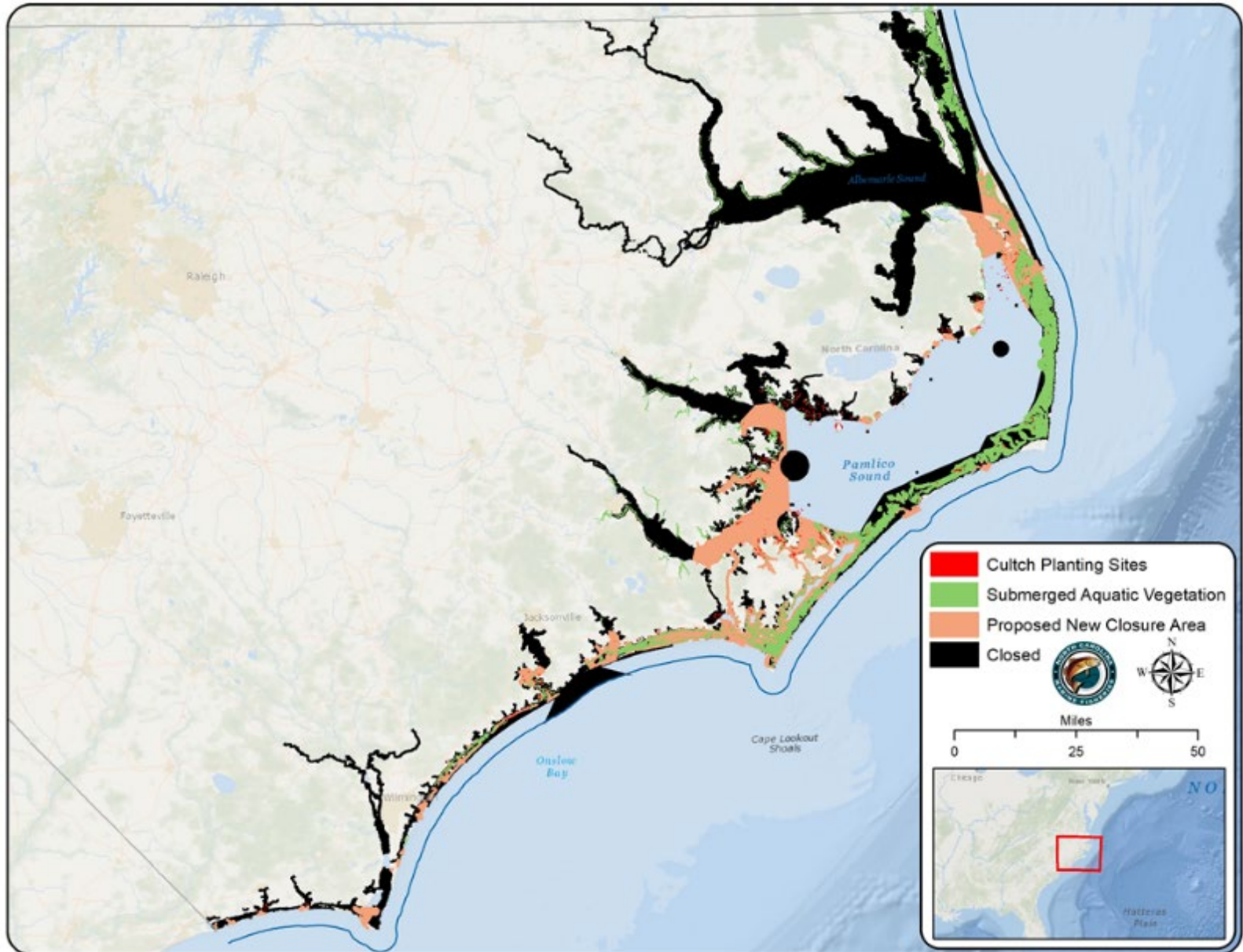
Amendment 2 – Recommendation Summary

- Use available critical habitat and finfish abundance data
- Use targeted area closures to protect critical habitat and reduce bycatch
- Continued use of BRDs and other effort restrictions effective for reducing bycatch and allowing access
- Habitat, bycatch, and access considered regionally

Region	Open (acres)	Closed (acres)	Proposed Closed (acres)
Northern - Pamlico Sound and adjacent rivers and bays	1,002,846	909,428	228,733
Central - Core Sound to Bogue Sound	87,601	39,958	68,919
Southern - South of White Oak River	26,636	51,181	17,553
Total	1,117,083	1,000,567	315,206

Region	Remains Open (acres)	New Closed (acres)	% Closed
Northern - Pamlico Sound and adjacent rivers and bays	774,113	1,138,162	59.5
Central - Core Sound to Bogue Sound	18,682	108,877	85.4
Southern - South of White Oak River	9,083	68,735	88.3
Total	801,878	1,315,773	62.1

Complete Area Closure Recommendation



Research Recommendation

- Division recommends the MFC support investigating the feasibility and utility of a shrimp trawl observer program
- Division recommends continuation of the industry workgroup to develop, identify, and test gears that reduce bycatch



Questions?

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