



# *Oyster and Hard Clam Fishery Management Plans*

Amendment 5 & Amendment 3

*Department of Environmental Quality*  
**Marine Fisheries**

NC Marine Fisheries Commission

Joe Facendola, Bennett Paradis, Jeff Dobbs, and Lorena de la Garza

Nov 17, 2023



# Agenda

## Action Items

- MFC Questions and Input on Management Strategies
- Vote/Approve - Oyster Goal & Objectives
- Vote/Approve - Clam Goal & Objectives

## Presentation

- Scoping Results
- Recreational Shellfish Harvest
- Eastern Oyster Management Strategies
  - Subtidal Oyster Mechanical Harvest
  - Intertidal Oyster Hand Harvest
- Hard Clam Management Strategies
  - Mechanical Harvest



# Scoping Results

Scoping occurred from Sept 11- 22, 2023.

There were four in-person meetings, one of which also had a virtual participation option.

## Participation

- 10 attendees total across the four meetings
- 6 online questionnaires were completed

## Input

- General support for a license or permit option from the in-person participants.
  - With a nominal fee ranging from \$2-\$10
- No direct input was received from the mechanical harvesters for either species





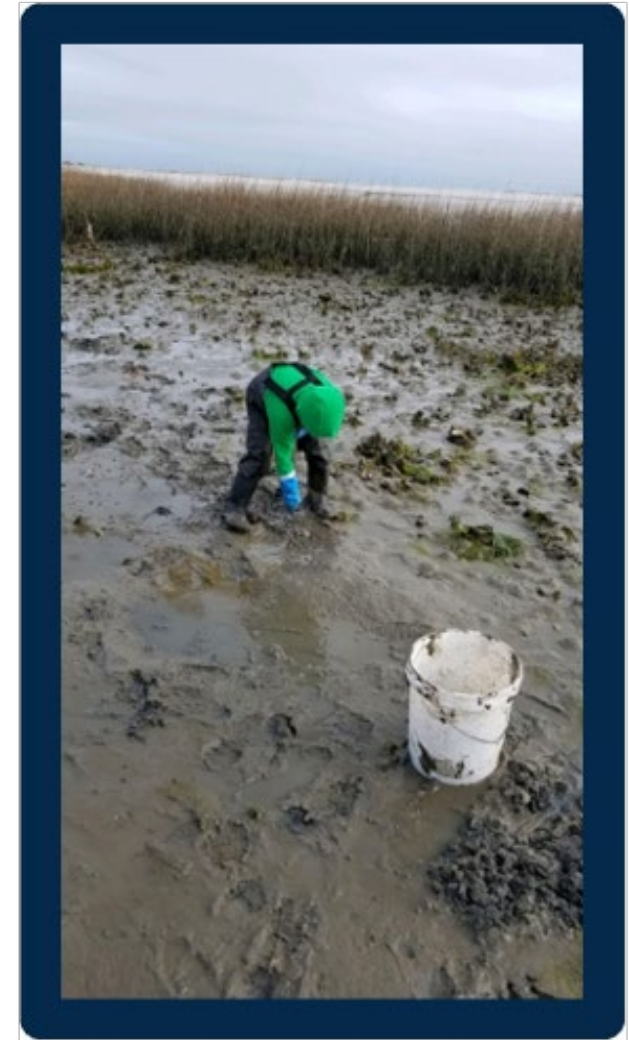
# DMF Scoping Follow-up Items

- Reaching out to industry: mechanical harvesters and dealers
- Emailing questionnaires to license holders
- Sending questionnaires with the Cultch Planting Survey



# Recreational Shellfish Harvest

- Data gap: recreational oyster and clam landings
  - Unknown effort
  - Unknown harvest amounts
- Data needed for future stock assessment
- No recreational license or permit required
  - CRFL survey yielded limited data



# Recreational Shellfish Harvest

- Need a means to accurately survey all potential recreational harvesters
- Explore licensing and permitting options
- Requires Legislative Action





## North Carolina Oysters Play Multiple Roles



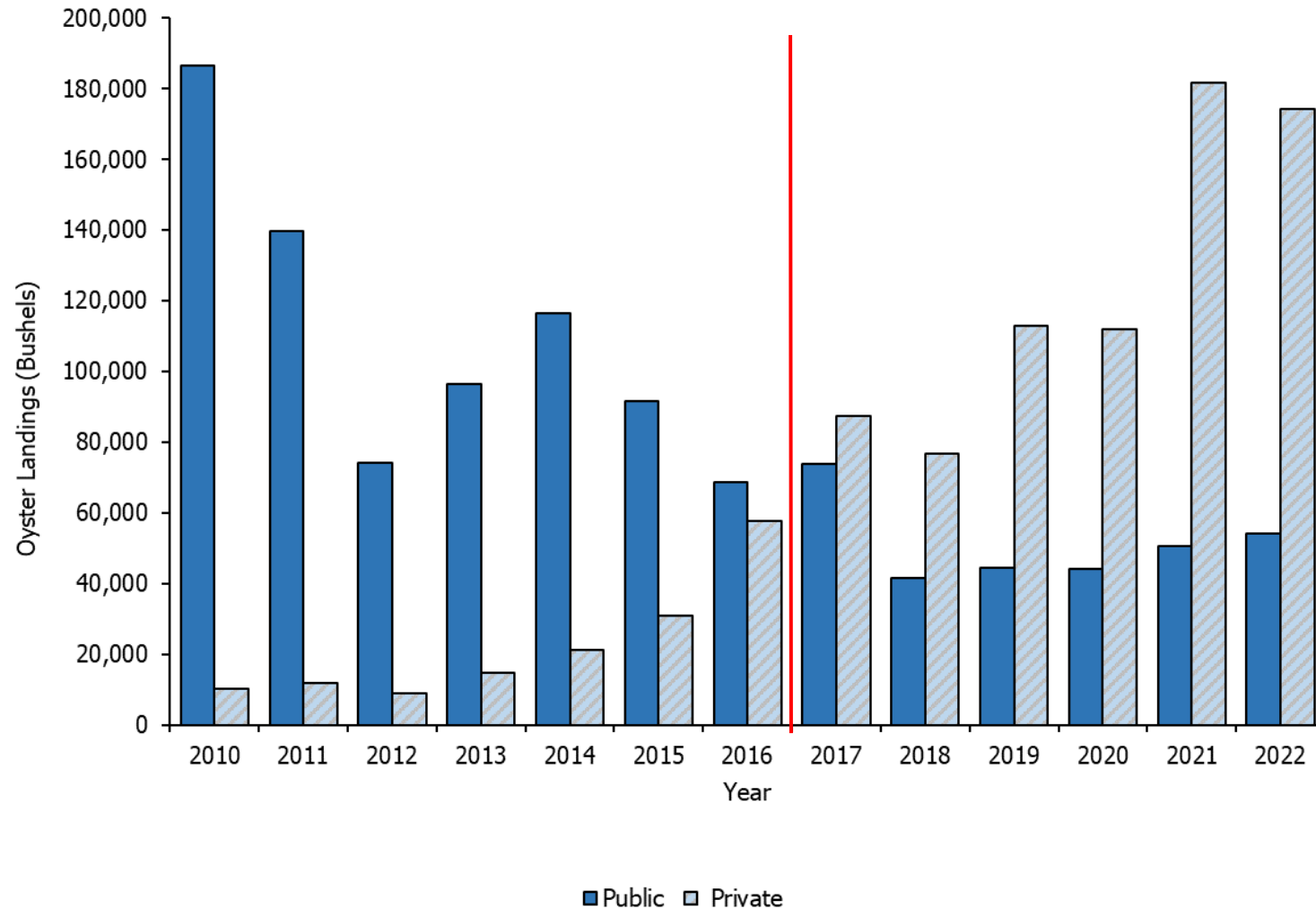
Fishery Resource



Essential Habitat



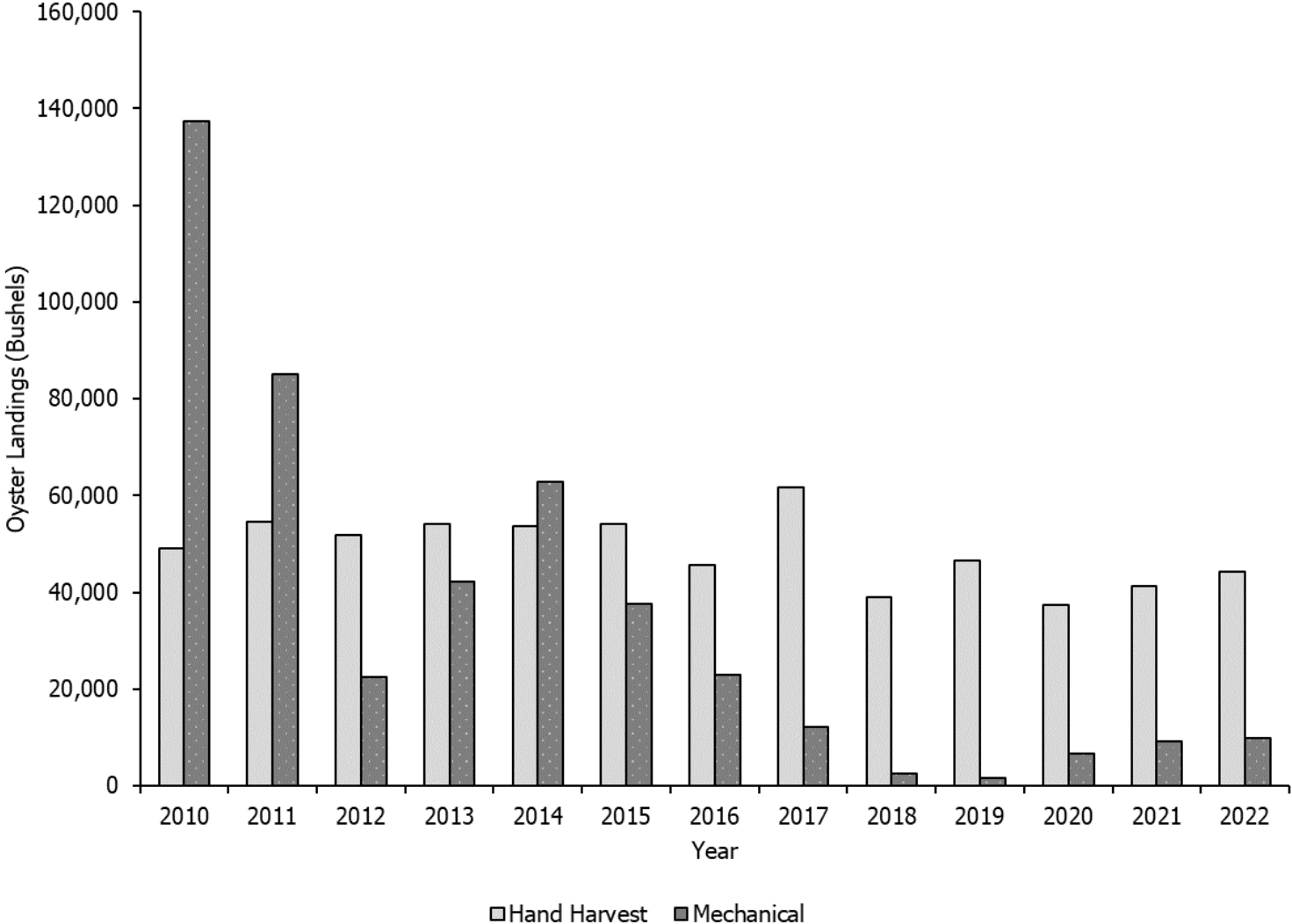
# Oyster: Management Background



- Oyster FMP Amendment 5 will focus on wild oyster management
- NC Shellfish Lease and Aquaculture Program manages private culture



# Oyster: Management Background



- **Mechanical Harvest**

- Influence overall landings
- Declines in participation and subtidal oysters

- **Hand Harvest**

- 2010-2018, 56% of landings
- Since 2018, 89% of landings



## *Oyster: NC Shellfish Rehabilitation Program*

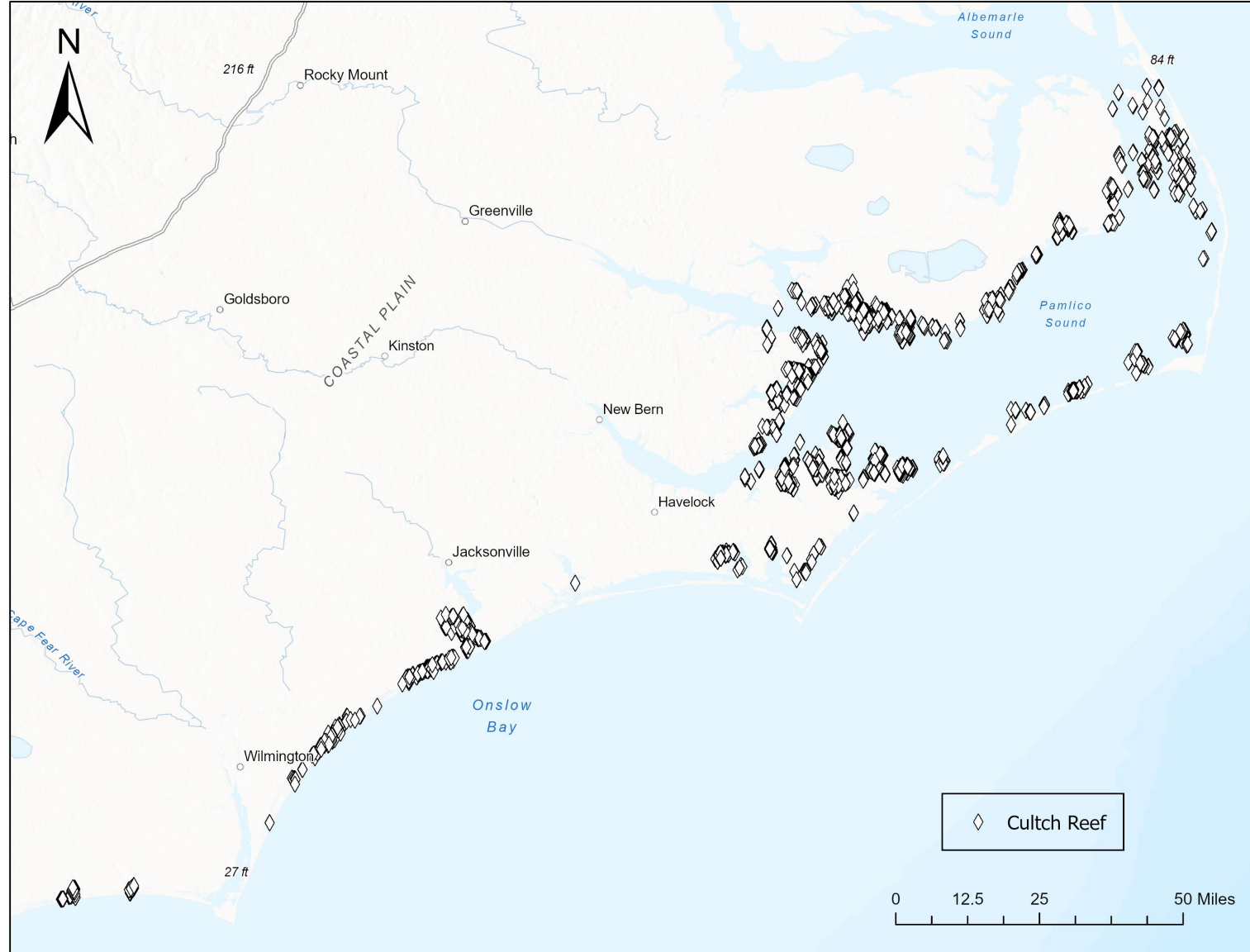


### **Cultch Planting Program**

- Harvestable cultch reefs
- Over 21 million bushels of material planted
- More than 624 acres created in the last 10 years



# Oyster: Cultch Planting Program Reef Sites



# *Oyster: NC Shellfish Rehabilitation Program*

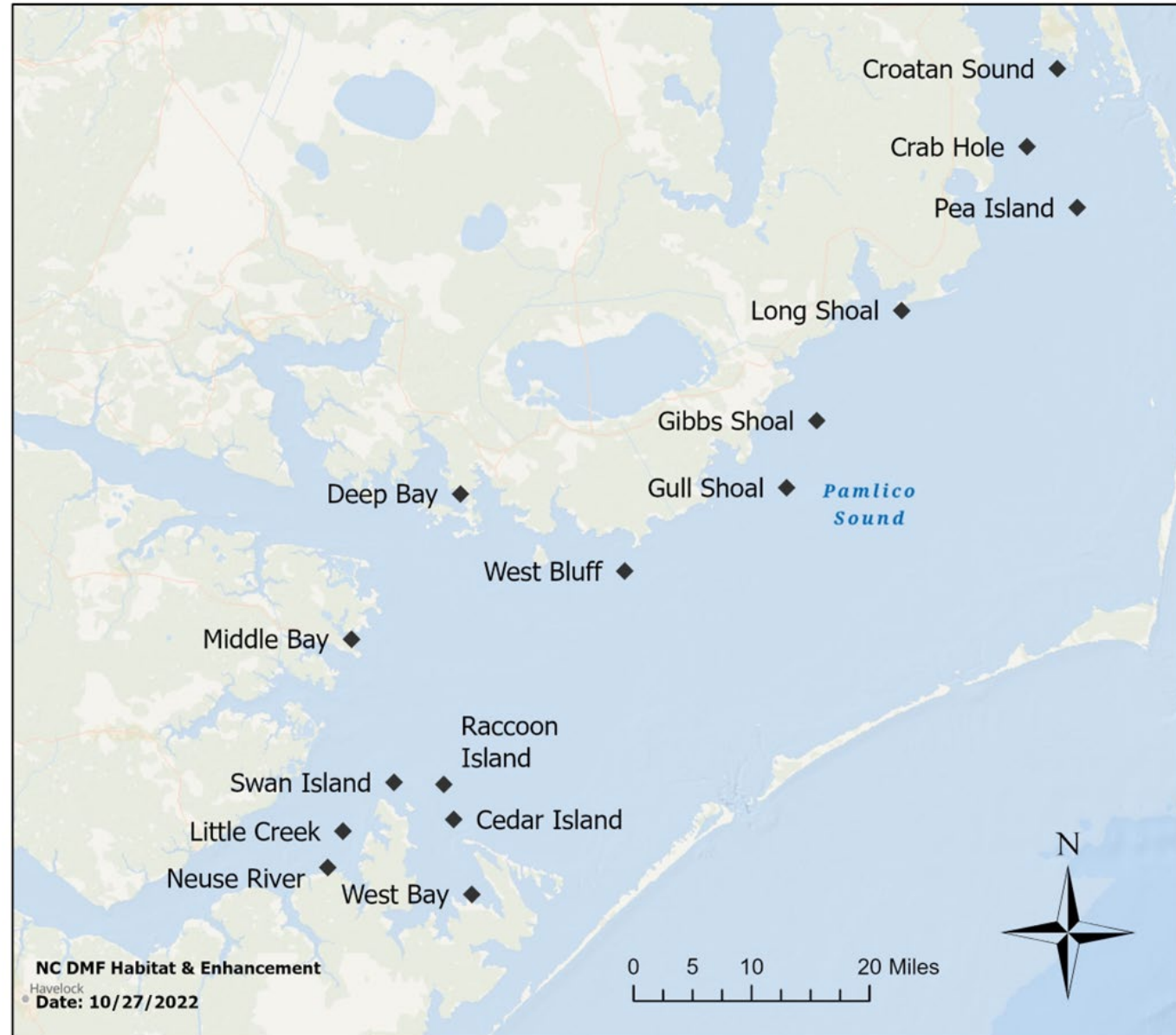
## **Oyster Sanctuary Program**

- Primary objective: supply oyster spat to Pamlico Sound
- 15 Large areas ~10-80 acres each
- Over 395 acres as Oyster Sanctuaries





# Oyster: Sanctuary Program Reef Sites



# Oyster: Mechanical Harvest Management Background

- Limited to Pamlico Sound
  - Season: 3<sup>rd</sup> Monday in November - March 31
  - 4 Management Areas
  - Closed by sampling trigger
  - Shallow bays 6-week possible season
- Impacted by natural events
  - Hurricanes, low dissolved oxygen, extreme temperatures
  - May limit harvest season
  - Season length vary annually
  - Close quickly by proclamation
- Western Pamlico Sound significantly impacted
  - Poor condition since 2017-2018 season
  - Natural reefs need height to be resilient to water quality impacts



# Oyster: Potential Management Strategies



- Significant amount of cultch planting in Pamlico Sound
  - Shallow bays
  - Crab Hole
- Current management does not distinguish between natural and cultch planted reefs.
  - Need to better integrate cultch planting program and management strategies
- Possible management goals
- Focus effort to cultch planted reefs
  - Protect and restore impacted natural reefs
  - More consistent commercial season and area openings
  - Prioritize Division data collection and monitoring





# Oyster: Hand Harvest Management Background

- Hand harvest dominant oyster harvest method since 1960s
  - Majority of landings
  - Landings relatively stable
- Harvest primarily in southern region
  - Majority of landings come from 5% of total shellfish growing waters
- Growing participation in the fishery was examined in Amendment 4
  - Bushel limits reduced for shellfish license holders
  - Amendment 5 will re-examine this issue
- Division implemented pilot intertidal oyster reef monitoring program

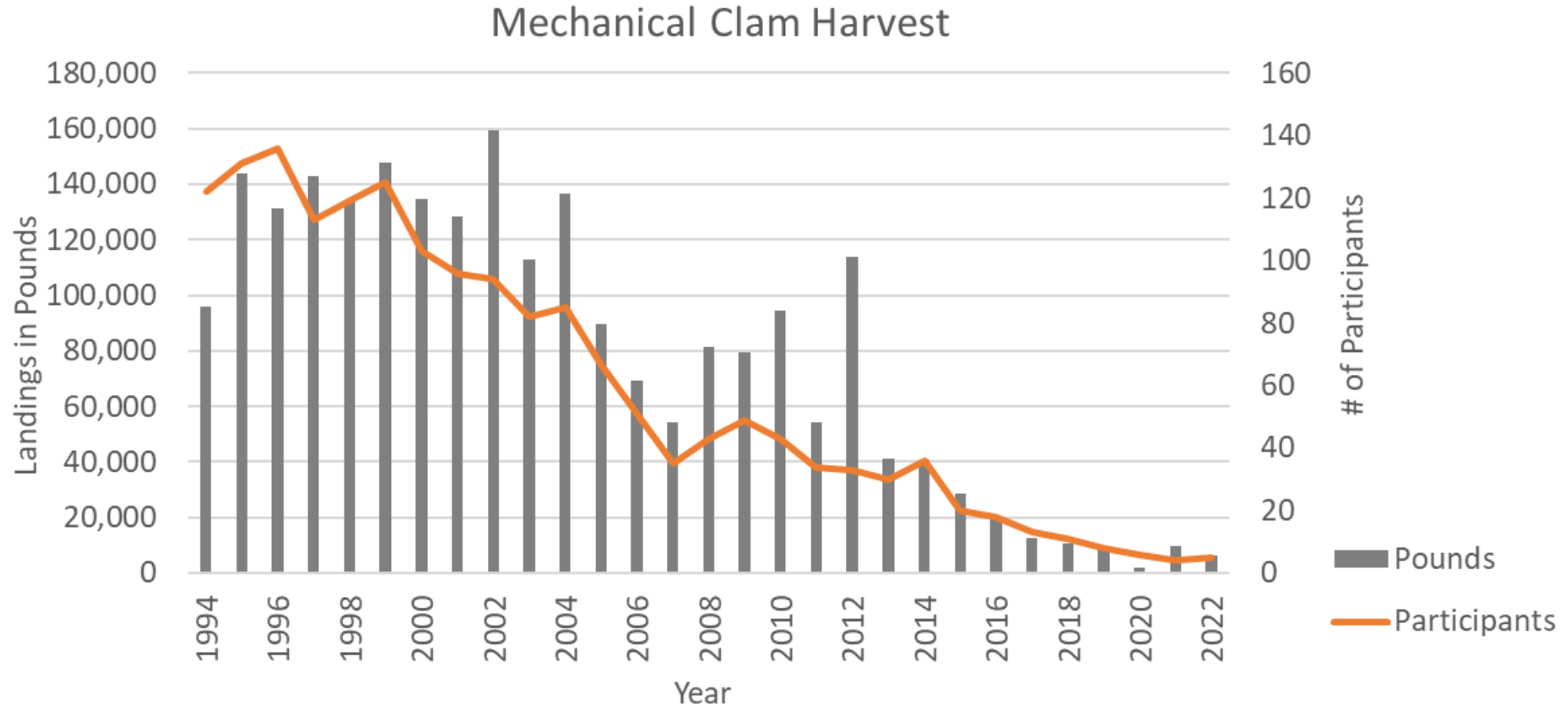




## *Hard Clam FMP Amendment 3*

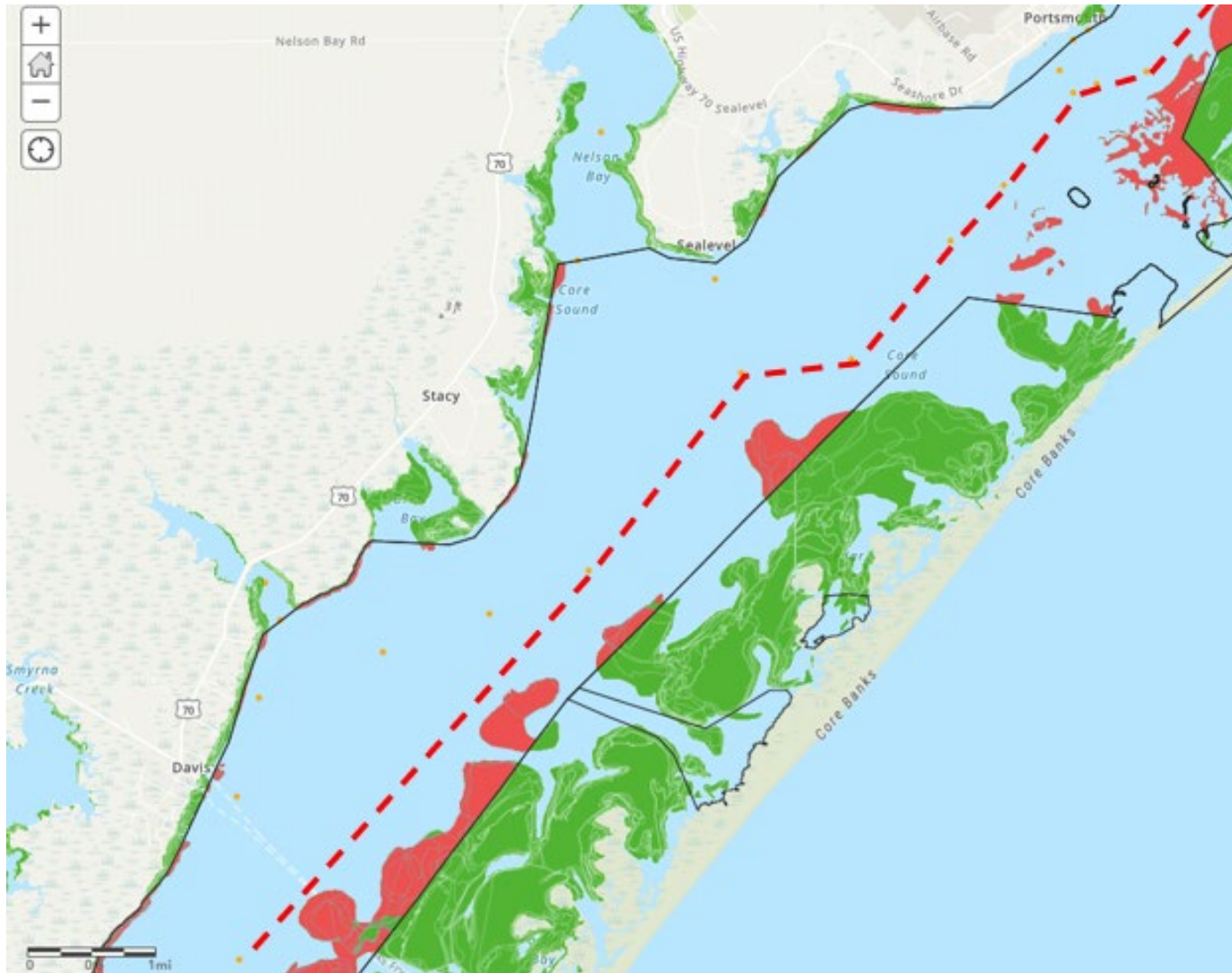


# Hard Clam: Management Background





# Hard Clam: Mechanical Harvest History



- Expansion of SAV and oyster rocks habitats
- Several areas have already been reduced



# Hard Clam: Potential Management Strategies

Potential strategies where management may be developed through Amendment 3:

- Further reduce or remove mechanical clam harvest areas
- Removing mechanical harvest of clams prior to maintenance dredging





# Hard Clam: Potential Strategies

## Effects of Mechanical Clam Harvest

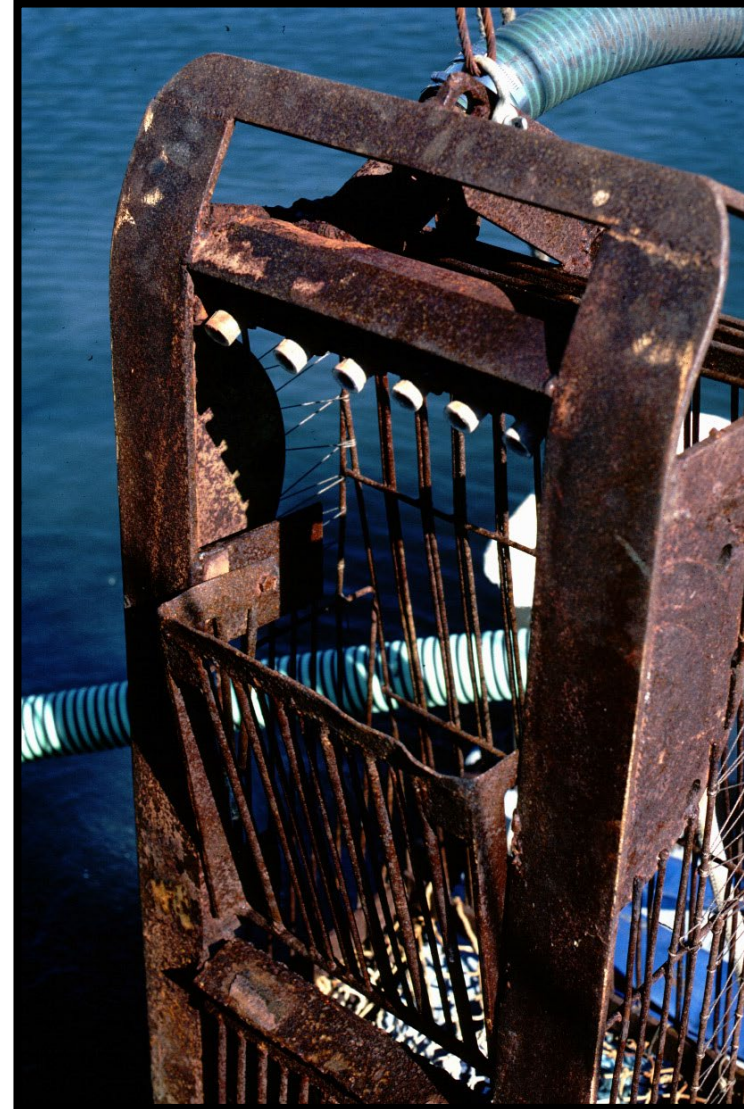
- Ecological impacts and destructive nature of gears on the bottom
- Potential negative effects on hard clam recruitment, seagrass amounts, and benthic macroinvertebrates
- Studies on bottom disturbing gear impacts range from highly variable, to no effect, to the complete elimination of some species, and long-term changes in the benthic community



# Hard Clam: Potential Strategies

## Maintenance dredging issues

- Division has allowed harvesters access to clams before maintenance dredging
  - Rule 15A NCAC 03K .0301 (b)
- Has not been used since 2007
  - Tight turnarounds for proclamations
  - Multi-step communication process





# Management Strategy Input







Management Strategy Input

Recreational Shellfish Harvest





The background of the slide is a close-up photograph of a large quantity of oyster shells. Some shells are open, revealing the dark interior, while others are closed. The shells are piled together, creating a textured, layered appearance. In the lower right corner, there is a circular logo for the North Carolina Department of Marine Fisheries, celebrating 200 years of management and conservation from 1822 to 2022. The logo features a fish and the text 'NORTH CAROLINA DEPARTMENT OF MARINE FISHERIES CELEBRATING 200 YEARS OF MANAGEMENT AND CONSERVATION 1822 2022'.

# Management Strategy Input

## Mechanical Oyster Harvest



# Management Strategy Input

## Hand Oyster Harvest





A close-up photograph of a large pile of harvested clams, showing various sizes and colors of shells, some open and some closed. The clams are piled together, creating a dense, textured surface.

# Management Strategy Input

## Mechanical Clam Harvest



# Action Items

## Action Items

- Vote on approval of Oyster Goal and Objectives
- Vote on approval of Hard Clam Goal and Objectives





# Oyster Amendment 5

## Goal and Objectives

### GOAL AND OBJECTIVES

The goal of the N.C. Oyster FMP is to manage the oyster resource to maintain oyster populations that provide long-term harvest and continue to offer protection and ecological benefits to North Carolina's estuaries. To achieve this goal, it is recommended that the following objectives be met:





# Oyster Amendment 5

## Goal and Objectives

### GOAL AND OBJECTIVES

The goal of the N.C. Oyster FMP is to manage the oyster resource to maintain oyster populations that provide long-term harvest and continue to offer protection and ecological benefits to North Carolina's estuaries. To achieve this goal, it is recommended that the following objectives be met:

- Use the best available biological, environmental, habitat, fishery, social, and economic data to effectively monitor and manage the oyster fishery and its environmental role.





# Oyster Amendment 5

## Goal and Objectives

### GOAL AND OBJECTIVES

The goal of the N.C. Oyster FMP is to manage the oyster resource to maintain oyster populations that provide long-term harvest and continue to offer protection and ecological benefits to North Carolina's estuaries. To achieve this goal, it is recommended that the following objectives be met:

- Support and implement the restoration and protection of oyster populations as both a fishery resource and an important estuarine habitat through the actions of the Cultch Planting and Oyster Sanctuary programs.





# Oyster Amendment 5

## Goal and Objectives

### GOAL AND OBJECTIVES

The goal of the N.C. Oyster FMP is to manage the oyster resource to maintain oyster populations that provide long-term harvest and continue to offer protection and ecological benefits to North Carolina's estuaries. To achieve this goal, it is recommended that the following objectives be met:

- Manage oyster harvesting gear use to minimize damage to habitat.





# Oyster Amendment 5

## Goal and Objectives

### GOAL AND OBJECTIVES

The goal of the N.C. Oyster FMP is to manage the oyster resource to maintain oyster populations that provide long-term harvest and continue to offer protection and ecological benefits to North Carolina's estuaries. To achieve this goal, it is recommended that the following objectives be met:

- Coordinate with DEQ and stakeholders to implement actions that protect habitat and environmental quality consistent with the Coastal Habitat Protection Plan (CHPP) recommendations.





# Oyster Amendment 5

## Goal and Objectives

### GOAL AND OBJECTIVES

The goal of the N.C. Oyster FMP is to manage the oyster resource to maintain oyster populations that provide long-term harvest and continue to offer protection and ecological benefits to North Carolina's estuaries. To achieve this goal, it is recommended that the following objectives be met:

- Promote stewardship of the resource through public outreach to increase public awareness regarding the ecological value of oysters and encourage stakeholder involvement in fishery management and habitat enhancement activities.





# Action Item: Vote on Oyster Amendment 5

## Goal and Objectives

### **GOAL AND OBJECTIVES**

The goal of the N.C. Oyster FMP is to manage the oyster resource to maintain oyster populations that provide long-term harvest and continue to offer protection and ecological benefits to North Carolina's estuaries. To achieve this goal, it is recommended that the following objectives be met:

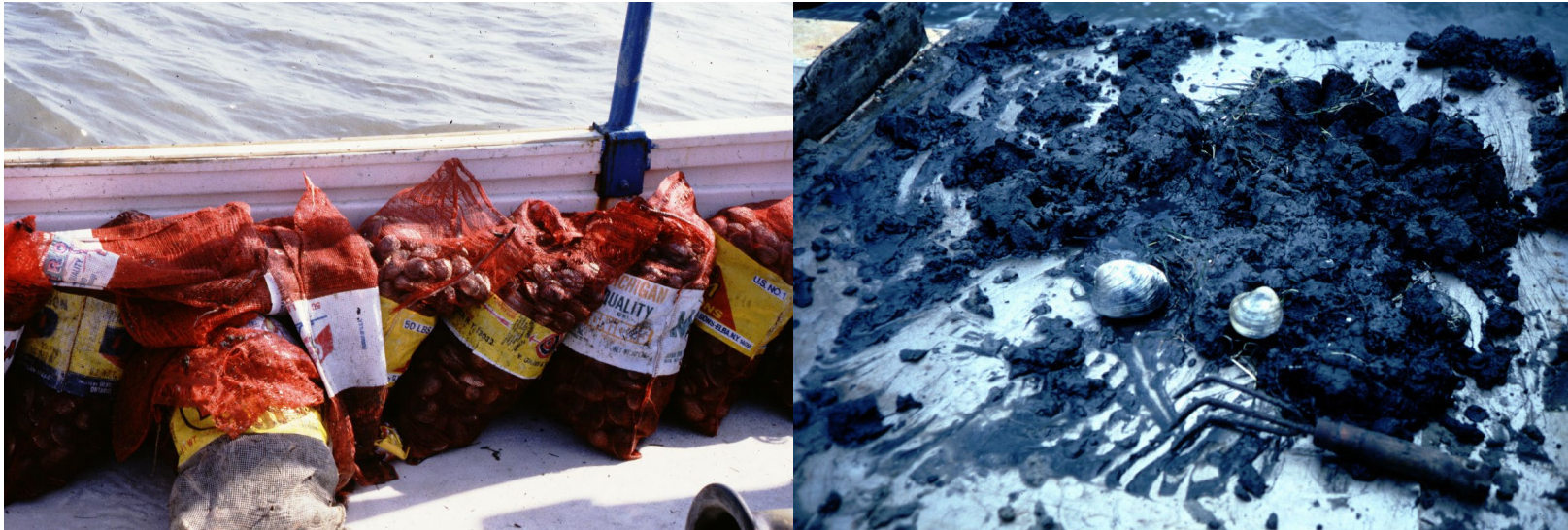
- Use the best available biological, environmental, habitat, fishery, social, and economic data to effectively monitor and manage the oyster fishery and its environmental role.
- Support and implement the restoration and protection of oyster populations as both a fishery resource and an important estuarine habitat through the actions of the Cultch Planting and Oyster Sanctuary programs.
- Coordinate with DEQ and stakeholders to implement actions that protect habitat and environmental quality consistent with the Coastal Habitat Protection Plan (CHPP) recommendations.
- Manage oyster harvesting gear use to minimize damage to habitat.
- Promote stewardship of the resource through public outreach to increase public awareness regarding the ecological value of oysters and encourage stakeholder involvement in fishery management and habitat enhancement activities.

# Hard Clam Amendment 3

## Goal and Objectives

### GOAL AND OBJECTIVES

The goal of N.C. Hard Clam FMP is to manage the hard clam resource to provide long-term harvest and continue to offer protection and ecological benefits to North Carolina's estuaries. To achieve this goal, it is recommended that the following objectives be met:





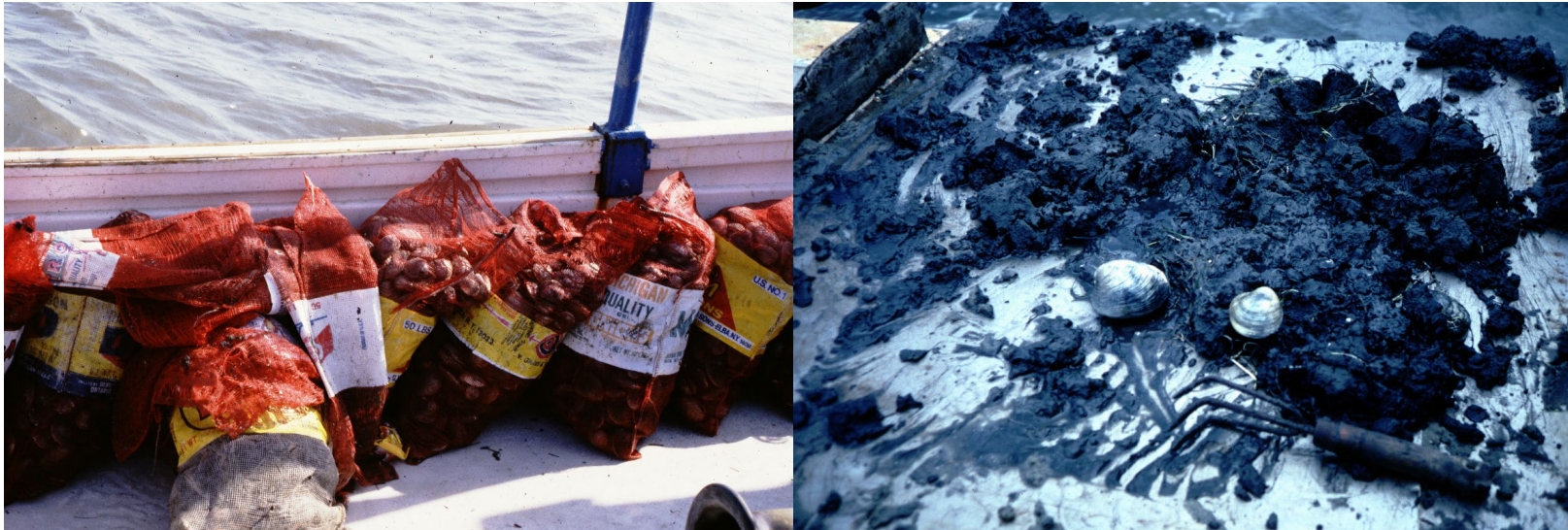
# Hard Clam Amendment 3

## Goal and Objectives

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The goal of N.C. Hard Clam FMP is to manage the hard clam resource to provide long-term harvest and continue to offer protection and ecological benefits to North Carolina's estuaries. To achieve this goal, it is recommended that the following objectives be met:

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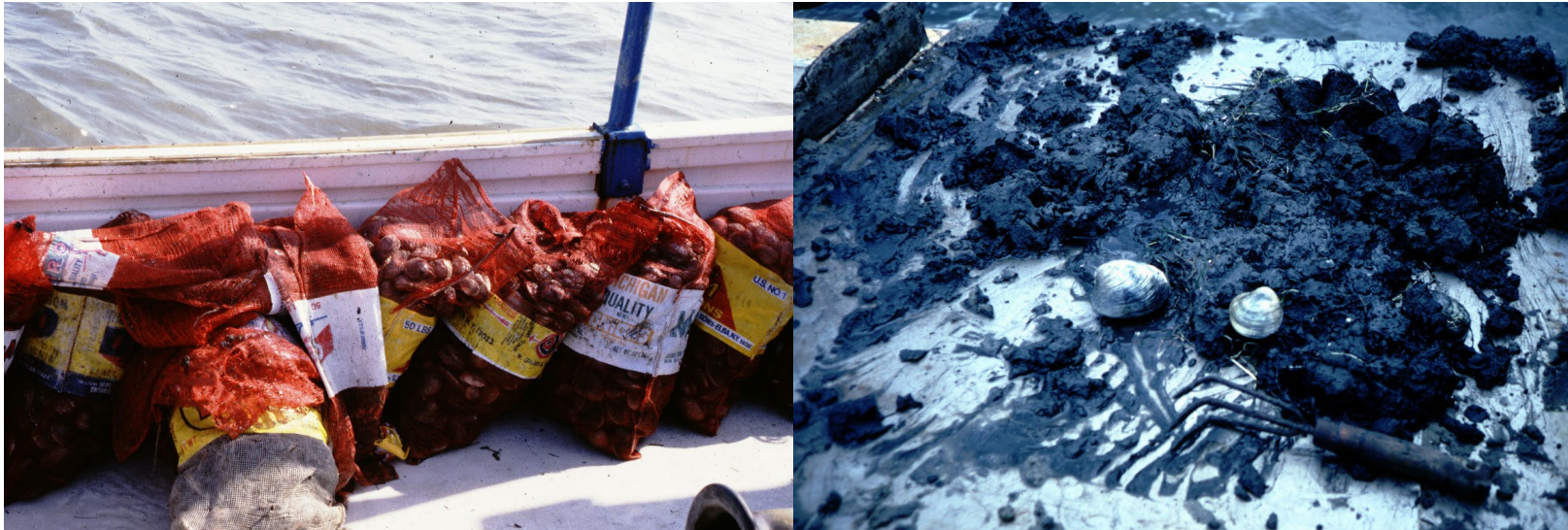
# Hard Clam Amendment 3

## Goal and Objectives

### GOAL AND OBJECTIVES

The goal of N.C. Hard Clam FMP is to manage the hard clam resource to provide long-term harvest and continue to offer protection and ecological benefits to North Carolina's estuaries. To achieve this goal, it is recommended that the following objectives be met:

- Manage hard clam harvesting gear use to minimize damage to the habitat.





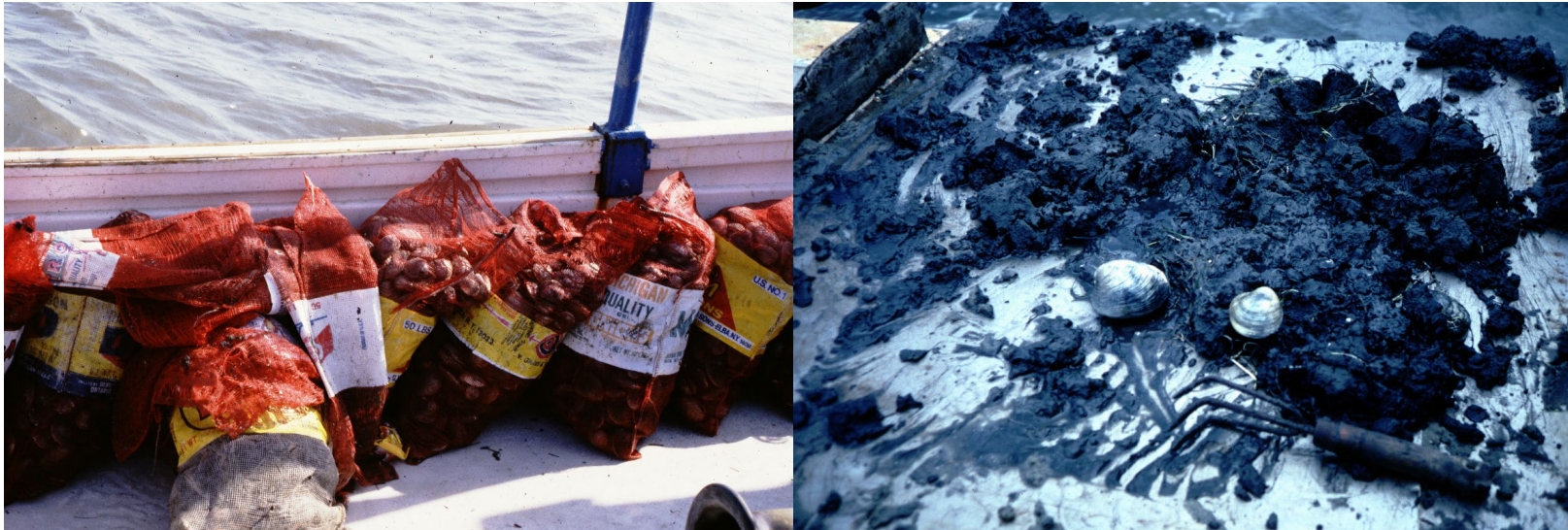
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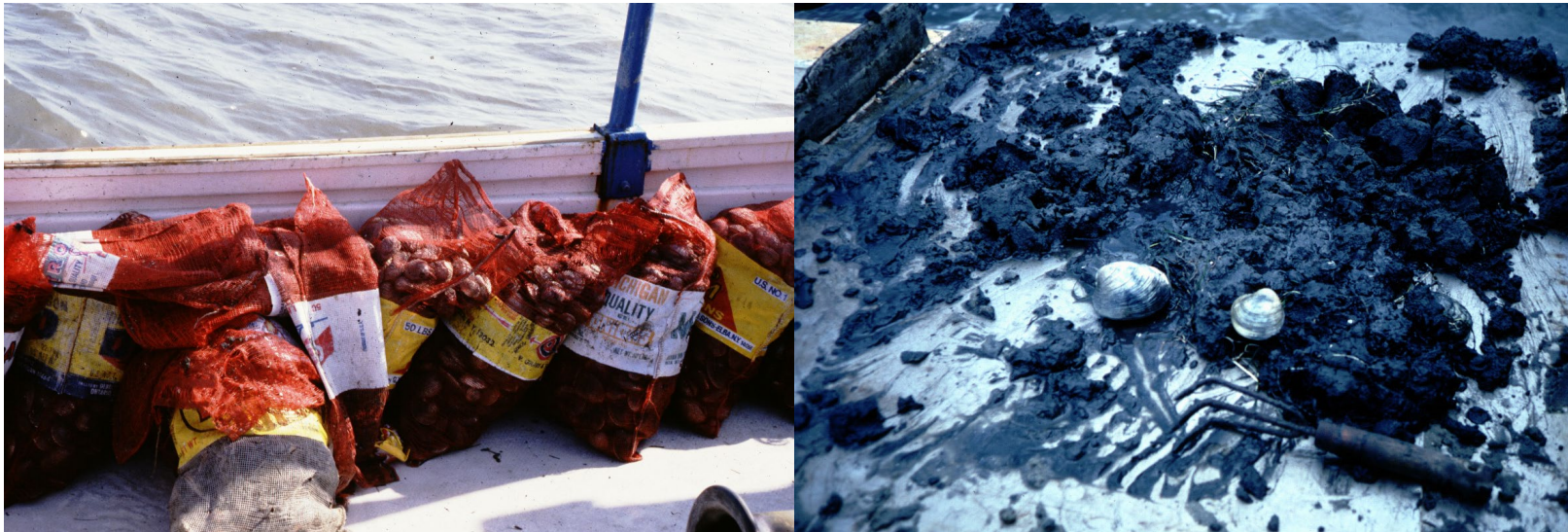
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- Promote stewardship of the resource through public outreach to increase public awareness regarding the ecological value of hard clams and encourage stakeholder involvement in fishery management and habitat enhancement activities.





# Action Item: Vote on Hard Clam Amendment 3

## Goal and Objectives

### **GOAL AND OBJECTIVES**

The goal of N.C. Hard Clam FMP is to manage the hard clam resource to provide long-term harvest and continue to offer protection and ecological benefits to North Carolina's estuaries. To achieve this goal, it is recommended that the following objectives be met:

- Use the best available biological, environmental, habitat, fishery, social, and economic data to effectively monitor and manage the hard clam fishery and its environmental role.
- Manage hard clam harvesting gear use to minimize damage to the habitat.
- Coordinate with DEQ and stakeholders to implement actions that protect habitat and environmental quality consistent with the Coastal Habitat Protection Plan (CHPP) recommendations.
- Promote stewardship of the resource through public outreach to increase public awareness regarding the ecological value of hard clams and encourage stakeholder involvement in fishery management and habitat enhancement activities.

# FMP Timeline



- Division holds public scoping

- Marine Fisheries Commission approves goal and objectives

- Division drafts FMP

- Division holds workshop to further develop draft plan with plan advisory committee

- Division updates draft plan for Marine Fisheries Commission presentation

- Marine Fisheries Commission votes to send draft FMP for public and advisory committee review

- Advisory committees meet to review draft plan and receive public comment

- Marine Fisheries Commission selects preferred management

- Department of Environmental Quality Secretary informs appropriate legislative groups of changes

- Marine Fisheries Commission votes on adoption of plan

- Division and Marine Fisheries Commission implement management



# Next Steps

Nov 2023 -  
June 2024

- Division drafts Amendment

July 2024

- Division holds FMP workshop to further develop draft with advisory committee

Sept 2024

- Division updates Amendment draft

Nov 2024

- Marine Fisheries Commission reviews draft and votes to send for public and advisory committee review



Questions?





# Contact Information

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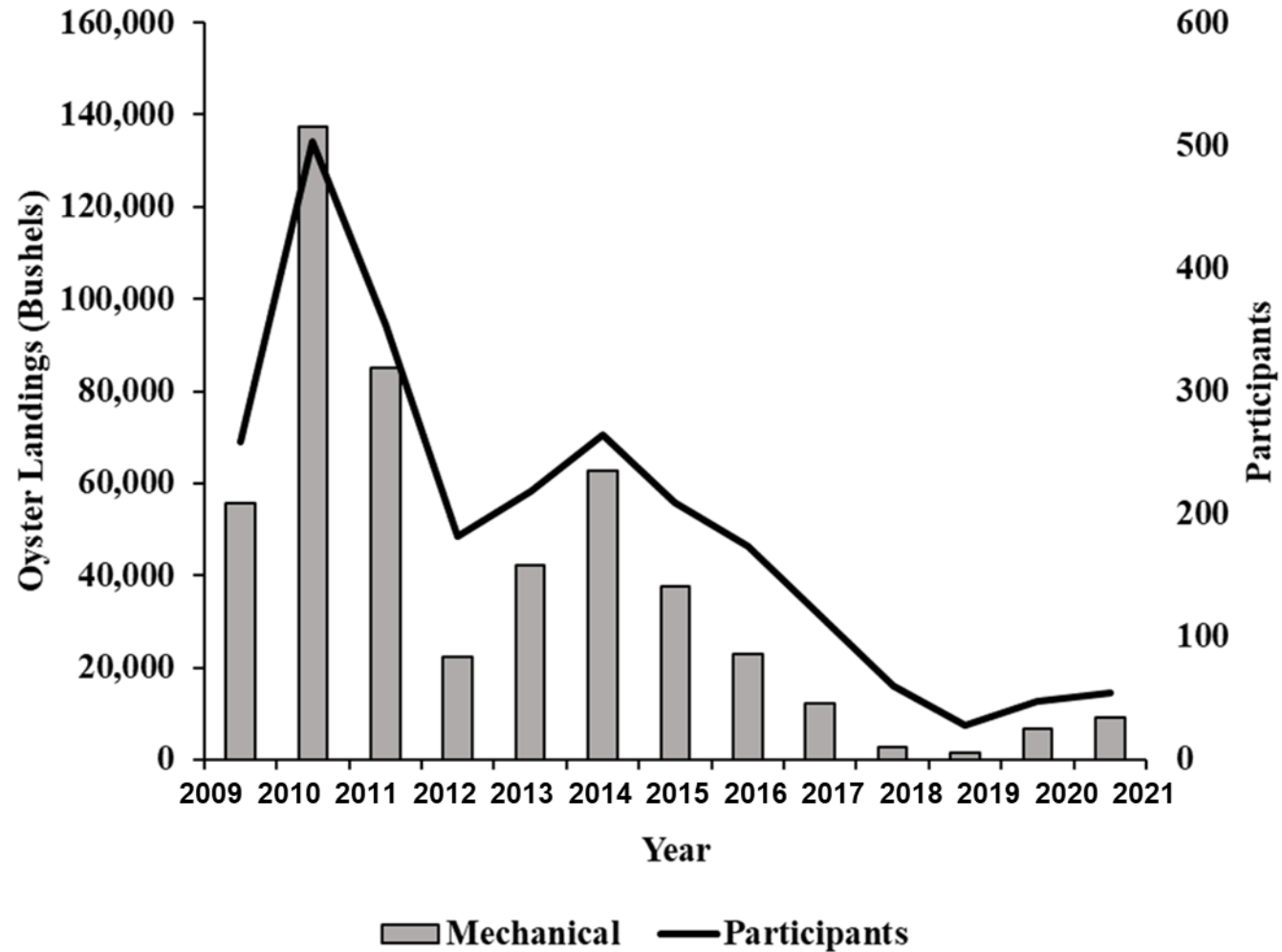
Office: 252-473-5734

# EXTRA SLIDES

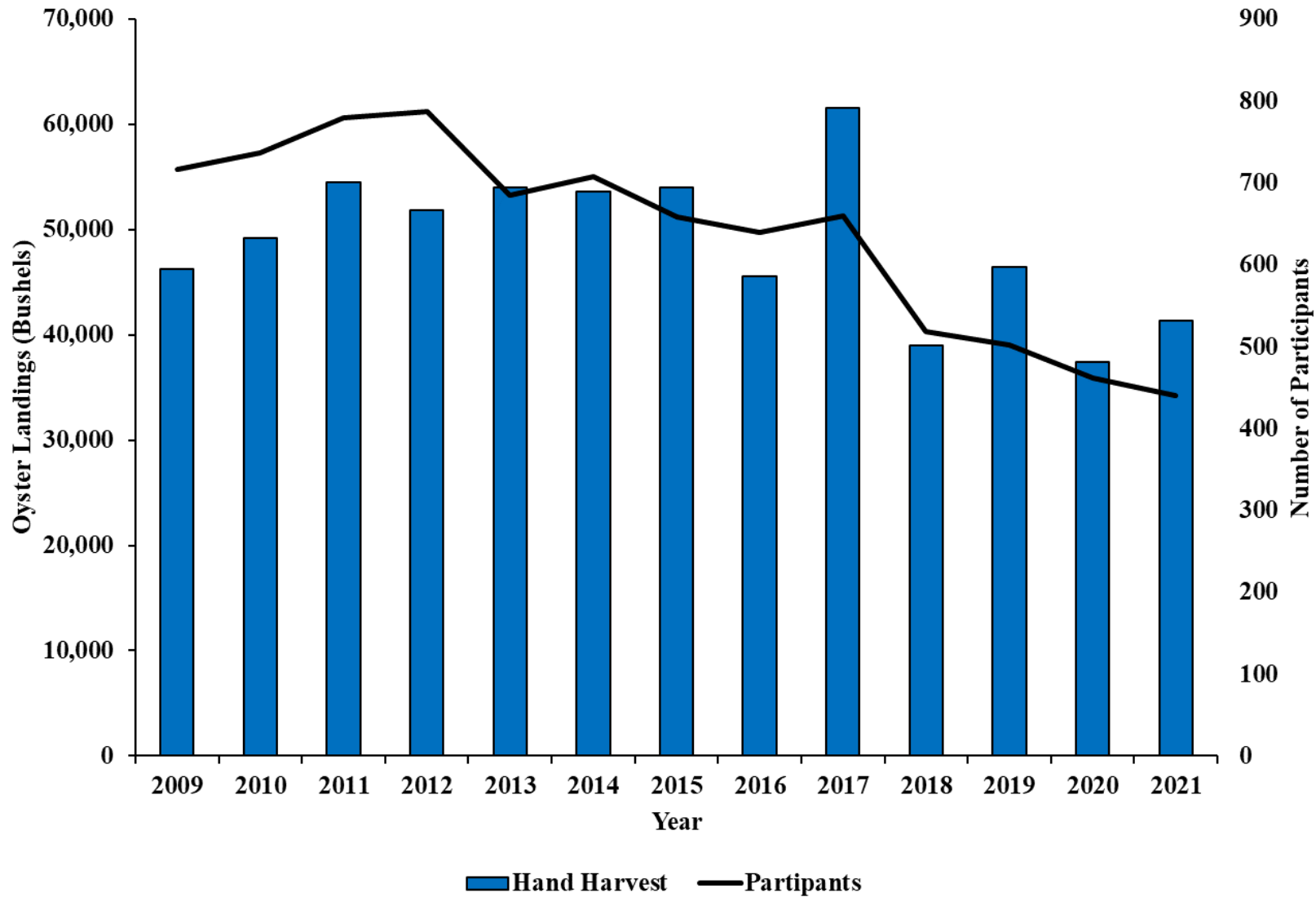




# Mechanical Oyster Harvest



# Commercial Oyster Hand Harvest





# Hard Clam: Mechanical Harvest History

Waterbody	Daily harvest limit (Number of clams)	Additional information
Northern Core Sound	5,000	Rotates one year open and one year closed opposite the open/close rotation of the New River
Southern Core Sound	5,000	Open annually
North River	3,750	Open annually
Newport River	3,750	Open annually
Bogue Sound	3,750	Open annually
White Oak River	6,250	Rotates one year open and one year closed opposite the open/close rotation of the New River
New River	6,250	Rotates one year open and one year closed opposite the open/close rotation of the White Oak River and the ICW in the Onslow/Pender counties areas
New River Inlet	6,250	Open annually from Marker 72A to the New River Inlet
ICW Onslow/Pender counties area	6,250	Intracoastal Waterway (maintained marked channel only) from Marker #65, south of Sallier's Bay, to Marker #49 at Morris Landing. All public bottoms within and 100 feet on either side of the Intracoastal Waterway from Marker #49 at Morris Landing to the "BC" Marker at Banks Channel. Open every other year when the New River is closed.

