



# *NC Shellfish Lease and Aquaculture Program*

*NC DEPARTMENT OF ENVIRONMENTAL QUALITY*

NC Division of Marine Fisheries

June 2, 2021



# *Shellfish Lease and Aquaculture Program*

## **Overview**

- History
- Background
- Authority and Standards
- Application Process
- Types of Shellfish Leases
- Current Statistics
- Challenges
- Legislative Update
- Current Efforts

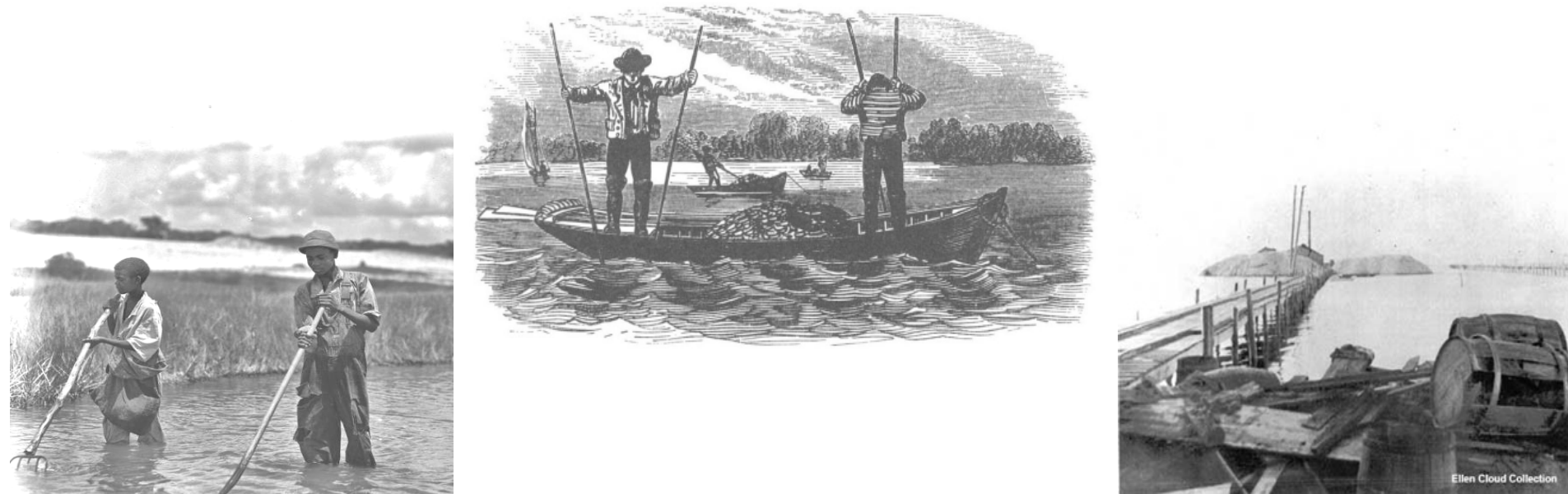




# *Shellfish Lease and Aquaculture Program*

## **History**

- North Carolina has provided for the private use of public trust waters for shellfish cultivation for over 150 years
- 1989 legislation expanded that role to include shellfish water column leases above existing shellfish bottom leases



# *Shellfish Lease and Aquaculture Program*

## **Background**

### **Dept. Environmental Quality**

#### **Div. Marine Fisheries**

#### **Div. Coastal Management**

**Shellfish Lease  
and  
Aquaculture**

**Fisheries  
Management**

**Structure  
Permitting**

**Shellfish  
Sanitation**

**Marine  
Patrol**

**License and  
Statistics**





# *Shellfish Lease and Aquaculture Program*

## **Background**

Section Chief *Jacob Boyd*

Permits Coordinator *Zach Harrison*

Habitat Supervisor *Anne Deaton*

Program Coordinator *Owen Mulvey-McFerron*

Program Assistant *Marla Chuffo*

Biologist *Teri Dane*

Technicians *Anthony Frost, Dustin Walters, Scottie Tripp and  
Andrew Wells*



# *Shellfish Lease and Aquaculture Program*

## **Background**

### **Public Trust Doctrine**

- Generally, all “navigable waters” and the lands beneath them are subject to the Public Trust Doctrine
- Public trust rights are primarily a common law doctrine and are also in North Carolina General Statute and Constitution
- The state can create certain exceptions for uses of public trust waters (i.e. shellfish leases)
- Viewshed is not a public trust right acknowledged under North Carolina common law





# Shellfish Lease and Aquaculture Program Authority

## Governing Authorities and Regulation

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### NC General Assembly

- Shellfish Bottom and Water Column Lease Minimum Standards (N.C.G.S. 113-202, 202.1)



### NC Marine Fisheries Commission

Shellfish Leases and Franchises (MFC Rules 15A NCAC  
03O .0200)



US Army Corps of Engineers  
Nationwide #48 Regional Permit



# *Shellfish Lease and Aquaculture Program*

## **NC General Assembly**

### **Shellfish Lease Minimum Standards**

- Suitable for the cultivation and harvesting of shellfish in commercial quantities
- Must not contain a natural shellfish bed
- Will be compatible with other public uses including navigation, fishing and recreation
- Will not impinge upon the rights of riparian owners
- Any additional standards, established by the MFC in duly adopted rules
- Must not include an area closed to shellfish harvest





# *Shellfish Lease and Aquaculture Program*

## **NC Marine Fisheries Commission**

### **Shellfish Leases and Franchises**

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- Standards and definitions
- Application processing
- Production requirements
- Marking
- Riparian property consent if within 100 feet of developed shoreline
- Renewal
- Reporting
- Cancellation/termination
- Transfer
- Protection of private shellfish interest



# *Shellfish Lease and Aquaculture Program*

## US Army Corps of Engineers

### **Nationwide Permit #48 Regional Conditions**

- Prior Notice of Construction (PCN)
- 1/3 of waterbody
- SAV - Submerged aquatic vegetation
- 250 feet minimum from USCG navigational aid
- Not in USACE setbacks or marked/unmarked channels
- Consistency/applicable CAMA permits
- 20-foot buffer from marsh for water column/cage use





# *Shellfish Lease and Aquaculture Program*

## US Army Corps of Engineers

### **NWP #48 authorizes**

- Installation of buoys, floats, racks, trays, nets, lines, tubes, containers, and other structures into US navigable waters
- Discharges of dredged or fill material into US waters necessary for shellfish seeding, rearing, cultivating, transplanting, and harvesting

Floating upwelling system  
(FLUPSY)



# *Shellfish Lease and Aquaculture Program*

## State Aquaculture Permits

- Aquaculture Operation Permit
- Aquaculture Collection Permit
- Aquaculture Seed Transplant Permit
- Introduction and Transfer Permit
- Mechanical Harvest Permit
- Polluted Area Relay Permit
- Seed Oyster Management Area Permit
- Under Dock Oyster Culture Permit





# *Shellfish Lease and Aquaculture Program*

## Shellfish Lease vs Franchise

### Shellfish Lease

- Over public trust waters
- Cannot be on productive bottom
- Rent charged

### Franchise

- Over recognized submerged lands claim
- Can be on productive bottom
- No rent for bottom lease

# Shellfish Lease and Aquaculture Program

## Shellfish Lease Types

### 2 Types of Shellfish Leases

Bottom

Extensive  
(spat on shell, cultch)

Intensive  
(bottom cages)

Water Column

↓  
Intensive  
(floating gear)





# *Shellfish Lease and Aquaculture Program*

## **Shellfish Bottom Lease**

- **Extensive (spat on shell, cultch)**

- Low yield/acre, lower cost
- Minimal equipment
- Moderate labor
- Volume market/bushel
- Highly navigable

- **Intensive (bottom cages)**

- Gear  $\leq 18$  in. off bottom
- Higher yield/acre, higher cost
- Significant equipment needs
- Intensive labor
- Volume market/bushel
- Purchase oyster seed for grow out
- Potential navigation limitation





# *Shellfish Lease and Aquaculture Program*

## **Shellfish Water Column Lease**

- **Intensive (floating gear)**

- Amends a shellfish bottom lease
- Gear >18 in. off bottom or floating gear
- Mostly oysters
- High yield/acre, higher cost
- Significant equipment needs
- Intensive labor
- Half-shell market/count
- Limits navigation
- Purchase oyster seed for grow out



# *Shellfish Lease and Aquaculture Program*

## **Current Statistics**

| <b>Shellfish Lease Type <sup>1</sup></b> | <b>Total</b> | <b>Total Acreage <sup>2</sup></b> |
|--|--------------|-----------------------------------|
| Franchise                                | 48           | 513                               |
| Bottom                                   | 236          | 1,247                             |
| Water Column                             | 101          | 303                               |
| <b>Totals</b>                            | <b>385</b>   | <b>1,760</b>                      |

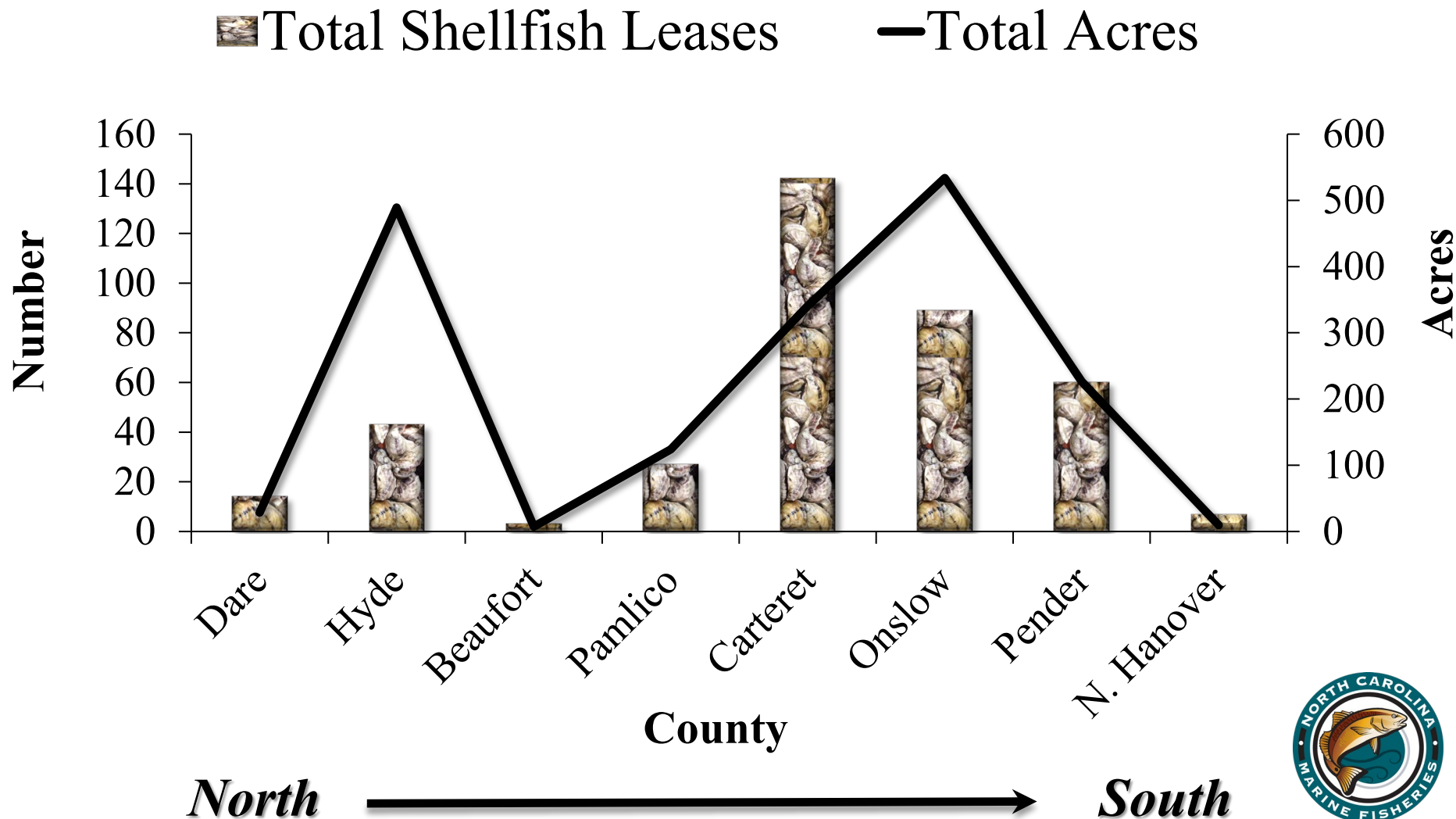
<sup>1</sup> Current as of March 18, 2021

<sup>2</sup> Total acreage only includes shellfish bottom and franchise because water column leases are over bottom lease



# Shellfish Lease and Aquaculture Program

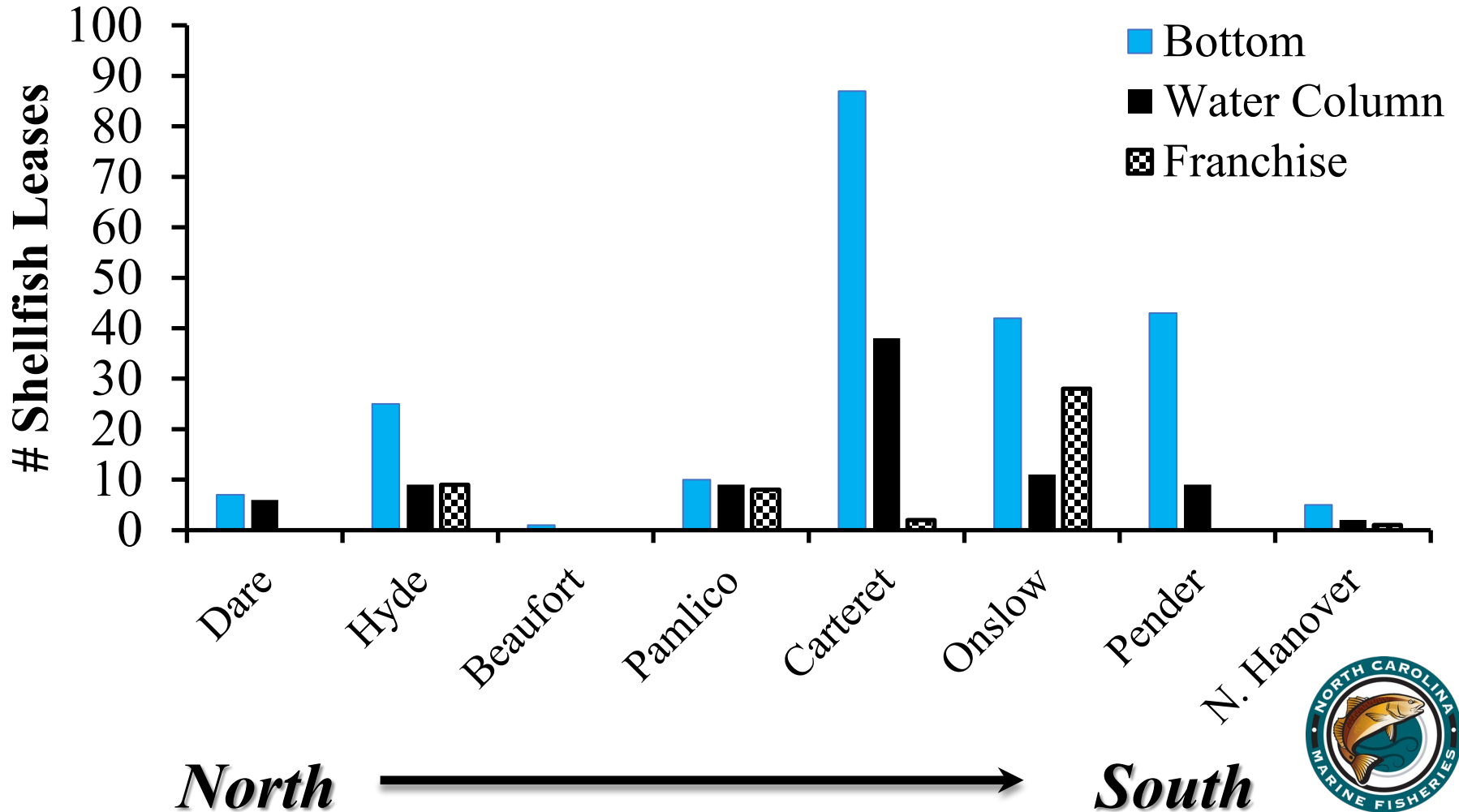
## Current Statistics





# Shellfish Lease and Aquaculture Program

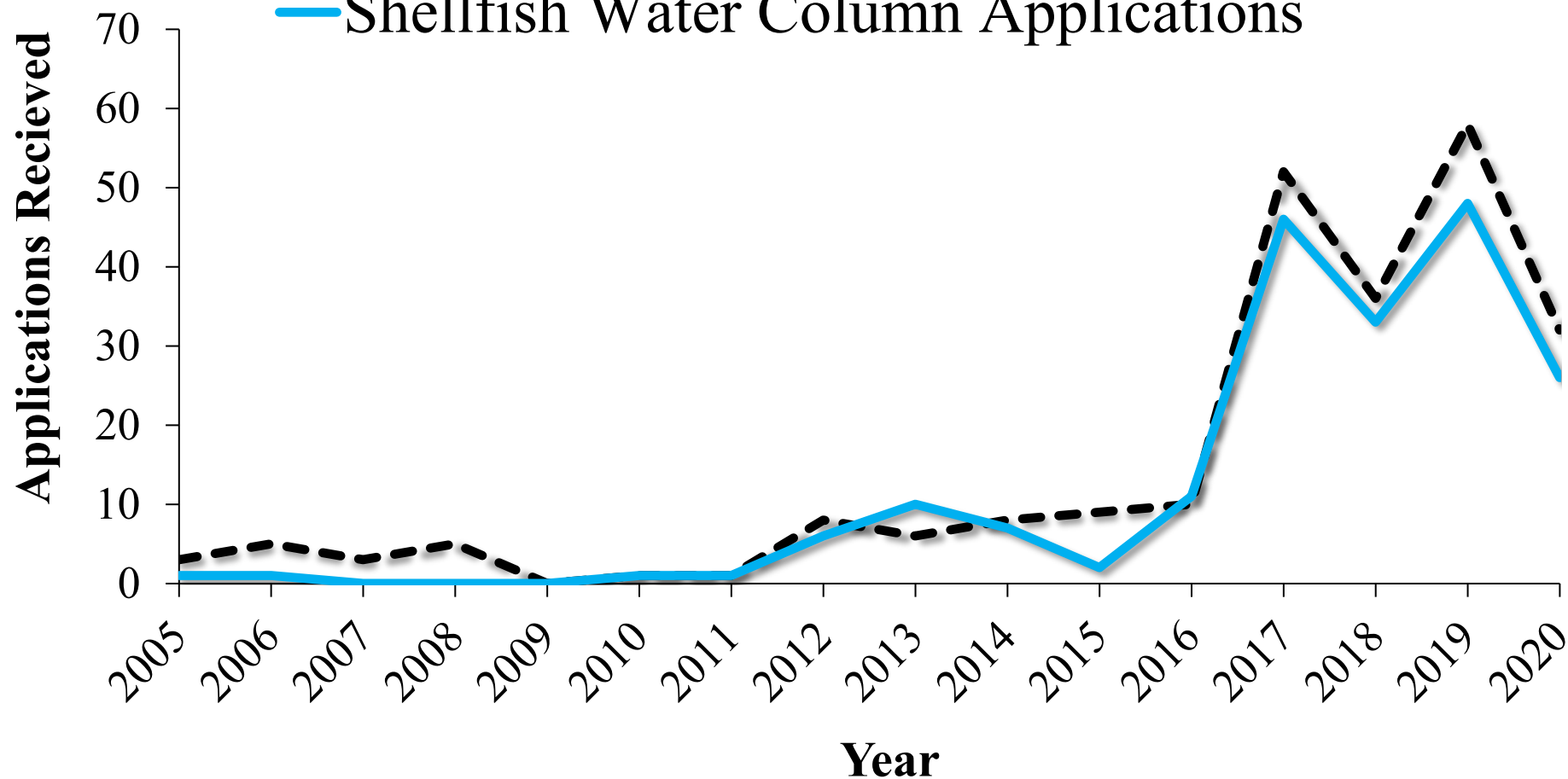
## Current Stats



# *Shellfish Lease and Aquaculture Program*

## Current Statistics

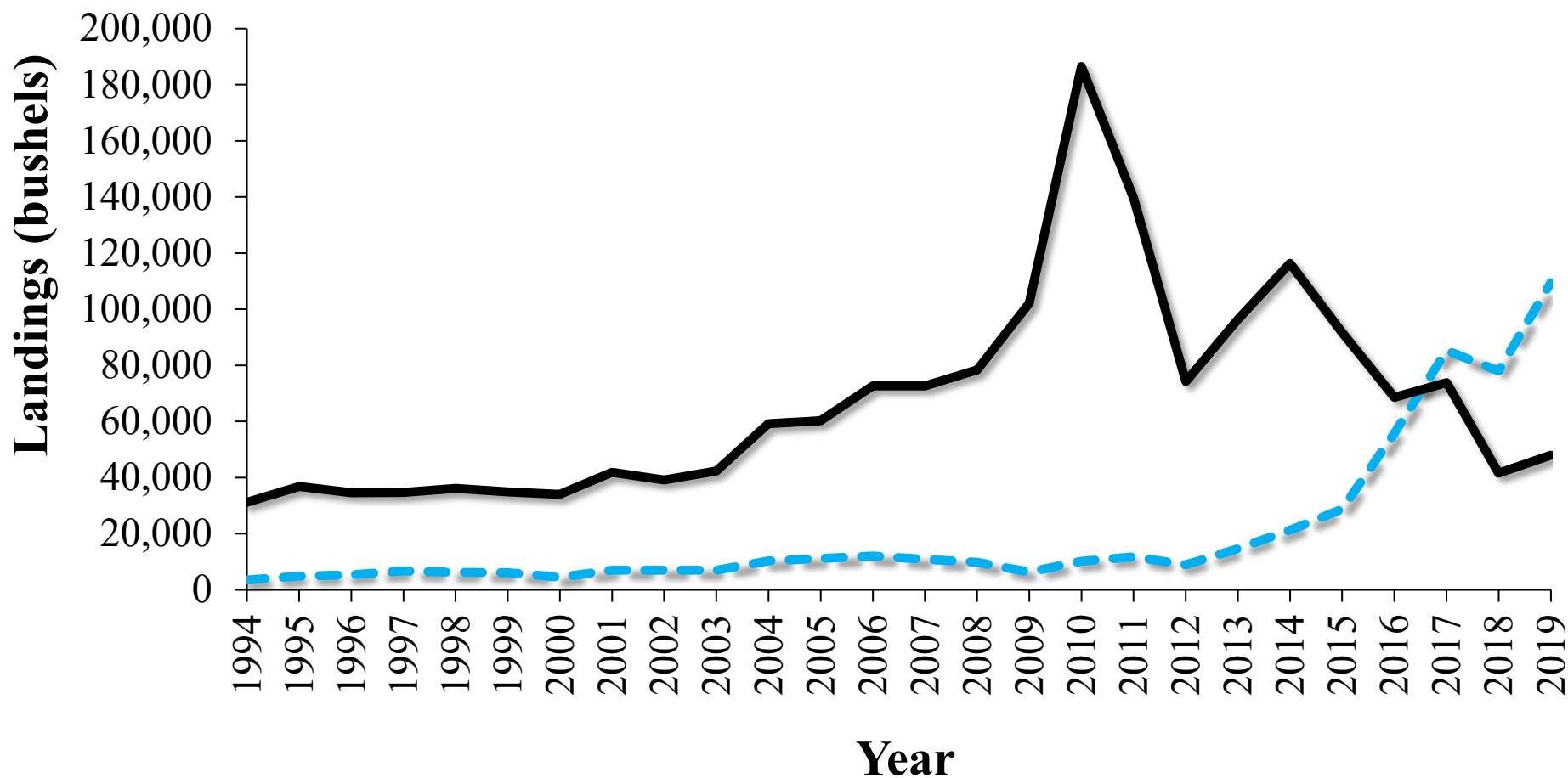
- Shellfish Bottom Applications
- Shellfish Water Column Applications



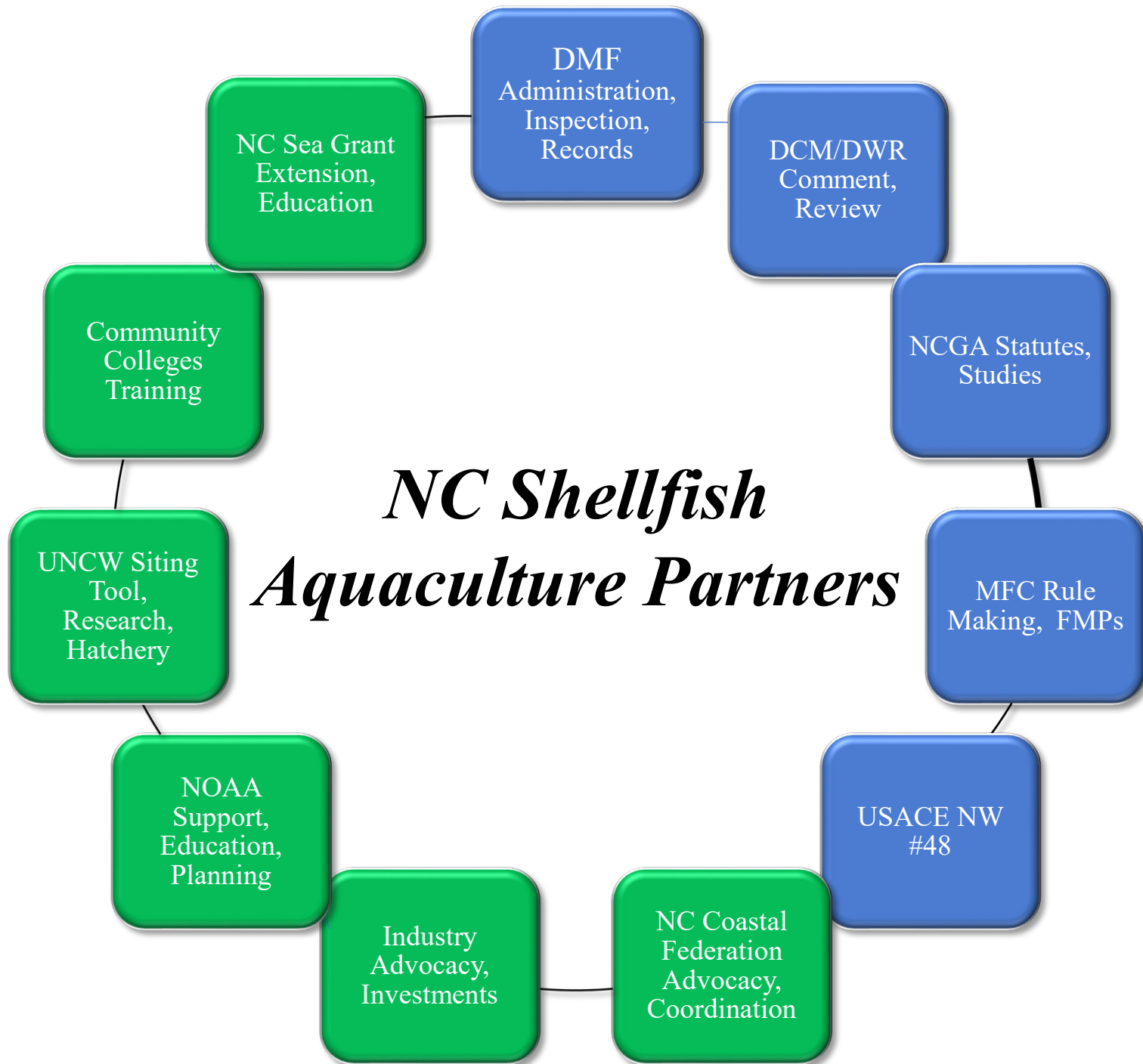
# *Shellfish Lease and Aquaculture Program*

## Current Statistics

-- Shellfish Lease/Franchise      — Wild Harvest

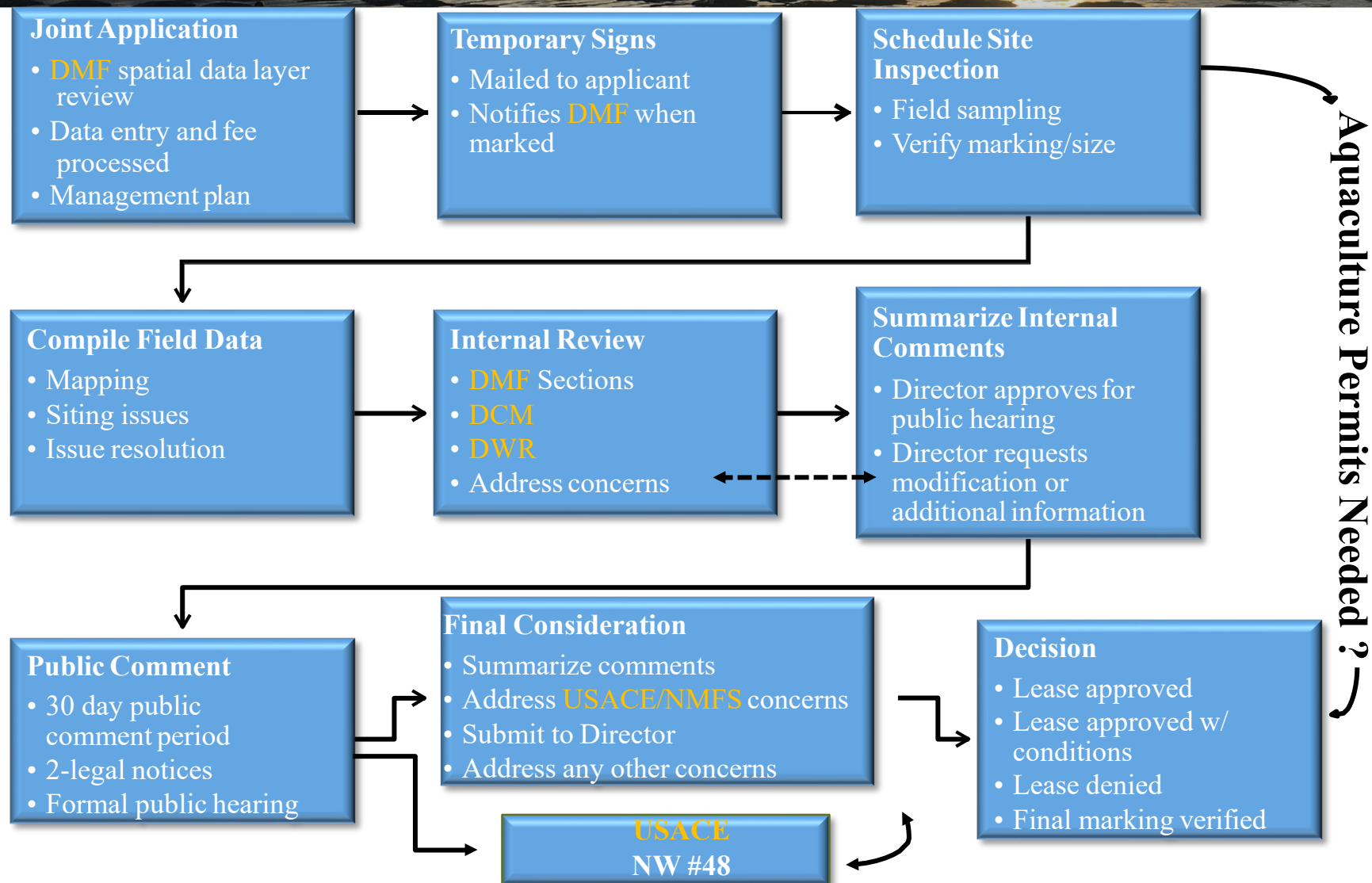






# Shellfish Lease and Aquaculture Program

## Shellfish Lease Application Process



# *Shellfish Lease and Aquaculture Program*

## **Siting Criteria and Resources**

### **Criteria**

- Wave energy, depth, current
- Boating, fishing, recreation conflicts
- Adjacent land use
- Water quality (salinity, dissolved oxygen, etc.)
- Restrictions, closures, moratoriums

### **Resources**

- Consultation with DMF, DCM, NC Sea Grant
- NC Shellfish Growers Association, other growers
- The North Carolina Shellfish Siting Tool -UNCW

<http://uncw.edu/benthic/sitingtool/>

- NCDMF Shellfish Aquaculture Tool







Legend

**Leases**

- Water Column
- Bottom
- Franchise
- Research Sanctuary
- Terminated
- Proposed - Bottom
- Proposed - Water Column




## Shellfish Aquaculture Tool

<https://arcgis/0v8nDu>



# *Shellfish Lease and Aquaculture Program*

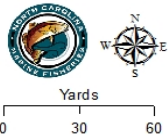
## **Formal Site Investigation**

- 
- Random grid method
  - Shellfish presence
  - Submerged aquatic vegetation (SAV)
  - Measure buffers
  - Verify markers, acreage
  - Other factors
    - Nearby habitat, navigation, docks, unmarked channels, fishing activity, adequate water depth, other potential problems

# Shellfish Lease and Aquaculture Program

## Formal Site Investigation

### SAV Sampling

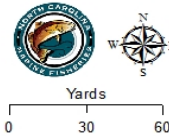
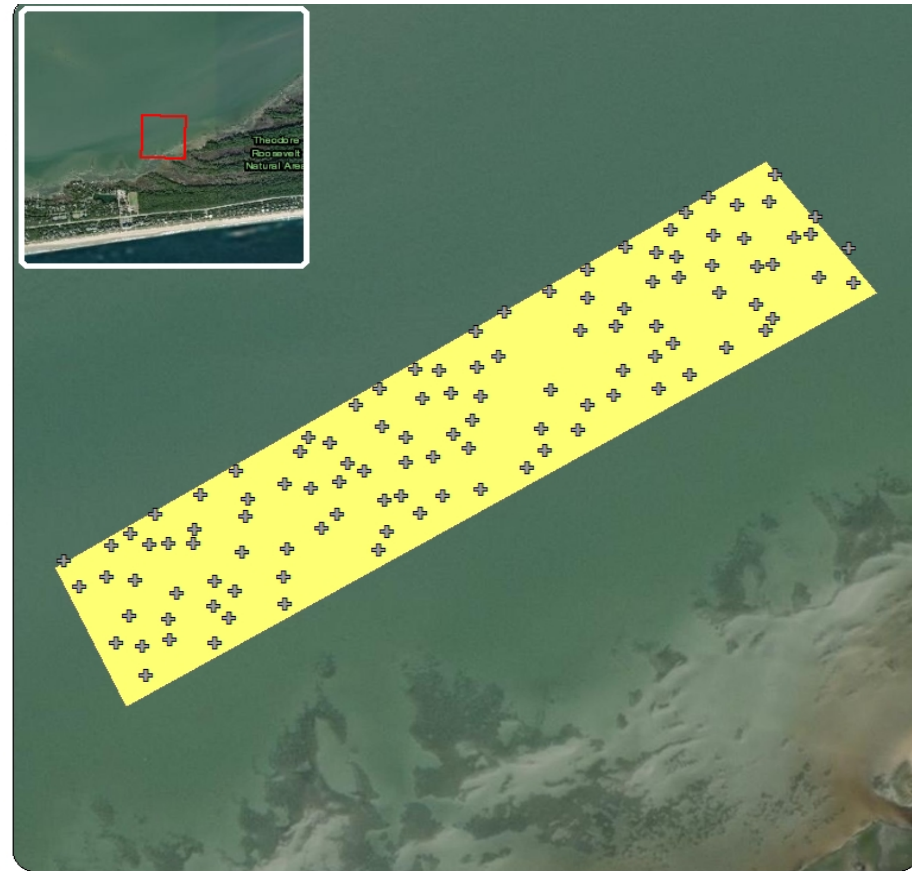


Proposed Lease Area

Acreage: 4.78



Coordinate System: NAD 1983 StatePlane North Carolina FIPS 3200 Feet



Sample with NO SAV

Sample WITH SAV

Proposed Lease Area

Acreage: 4.78



Coordinate System: NAD 1983 StatePlane North Carolina FIPS 3200 Feet



# *Shellfish Lease and Aquaculture Program*

## **Formal Site Investigation**

### **Patent Tongs**





# Shellfish Lease and Aquaculture Program

## Marking Requirements

- Corners marked with stakes:
  - 3 – 4 in. diameter
  - Extending  $\geq 4$  ft. high water
  - Shellfish lease # and leaseholder name
  - Shellfish water column leases (2 anchored yellow buoys)
- Boundary markers every 50 – 150 ft.

LEASE  
1860089

NC DIVISION OF MARINE FISHERIES LEASE  
4400010  
010 400 0010



# *Shellfish Lease and Aquaculture Program*

## **Contracts**

| <b>Fee</b>                                  | <b>Bottom</b> | <b>Water Column</b> |
|---|---------------|---------------------|
| 1 <sup>st</sup> yr. - rent prorated June 30 | \$1 per acre  | \$100 per acre      |
| Annual rent                                 | \$10 per acre | \$100 per acre      |
| Renewal fee (10 yr. contract)               | \$100         | \$100               |





# Shellfish Lease and Aquaculture Program

## Production Requirements

July 1, 2019

| Type         | Production | Prior (per acre)                    | After (per acre)   |
|--------------|------------|-------------------------------------|--|
| Bottom       | Produce:   | 10 bu.                              | 20 bu.   |
|              | Plant:     | 25 bu. seed <b>OR</b> 50 bu. cultch | 15,000 seed: <i>Extensive</i><br>23,000 seed: <i>Intensive</i> |
| Water Column | Produce:   | 40 bu.                              | 50 bu.   |
|              | Plant:     | 100 bu. seed <b>OR</b> cultch       | 23,000 seed  |



# *Shellfish Lease and Aquaculture Program*

## Benefits

- Increase commercial production of shellfish
- Supports working waterfront communities
- Ecosystem services
  - Habitat
  - Water quality
- Spawning potential to enhance natural population (diploid)

# *Shellfish Lease and Aquaculture Program*

## **Challenges**



- Negative public perception
- Substantial increase in user conflicts
- Increase in legal challenges
- Public health issues

- Limited staff and funding
- Experience level of applicants varies
- Seed/nursery availability
- Storm events/climate change



# *Shellfish Lease and Aquaculture Program*

## **Public Perceptions**





# *Shellfish Lease and Aquaculture Program*

## User Conflicts

- Shellfish leases can often conflict with public trust uses making balancing issues and determining compatibility challenging
- Increase in user conflicts and legal challenges with expansion of industry and use of the water column
- Many user conflict cases brought by riparian owners - “viewshed”
- Viewshed is not a public trust right traditionally acknowledged under North Carolina common law



# Shellfish Lease and Aquaculture Program

## User Conflicts

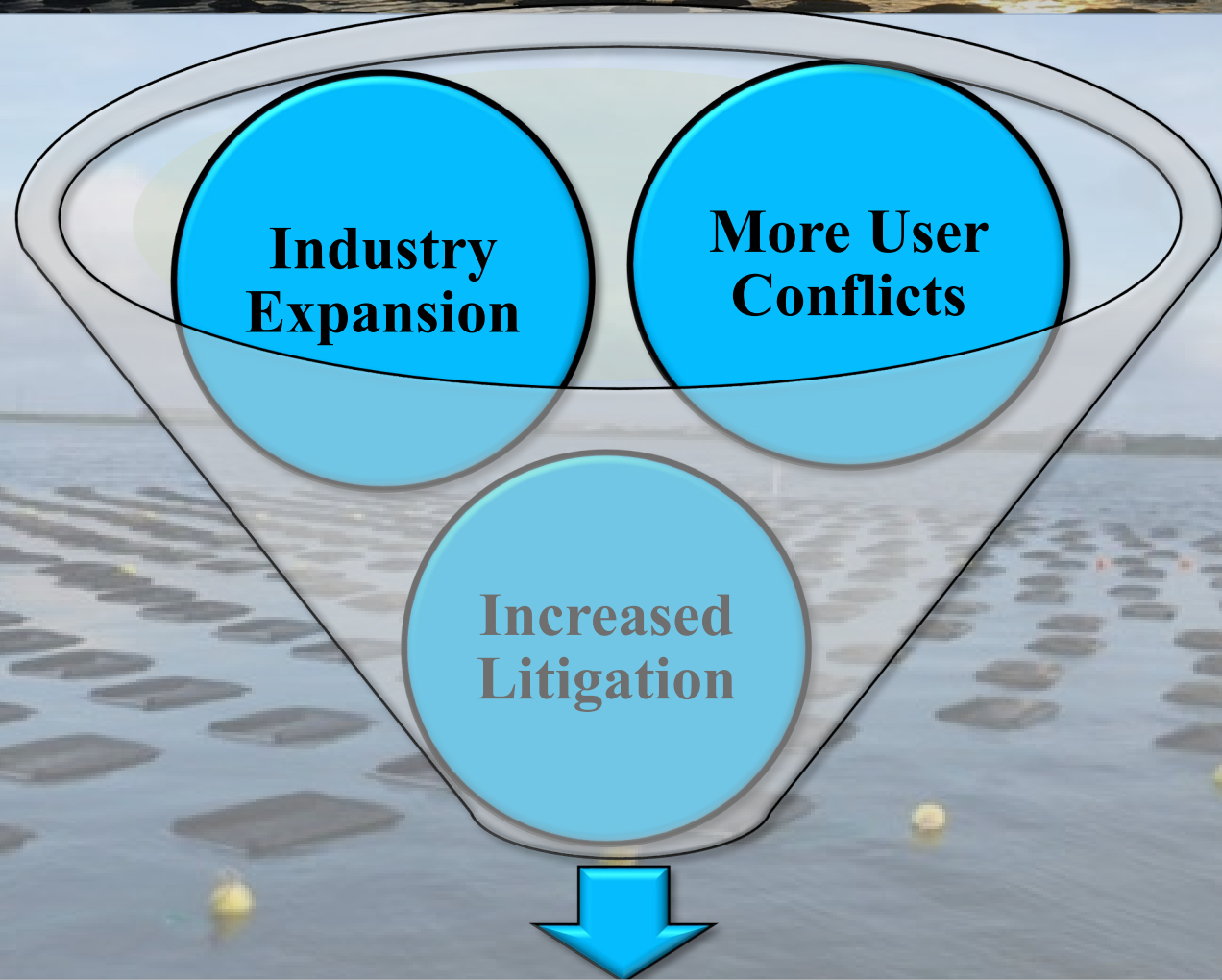
- General Assembly's legislative findings and declaration of policy:
  - Shellfish cultivation provides economic and ecological benefits to North Carolina
  - Policy is to encourage development of shellfish leases in ways that are *compatible* with other public uses

**A multifaceted approach is required to address user conflict issues**



# *Shellfish Lease and Aquaculture Program*

## **Challenges Summary**



**Slow and Challenging Process**



# *Shellfish Lease and Aquaculture Program*

## Challenges Summary

Ecological  
benefits

Compatibility

User  
conflicts

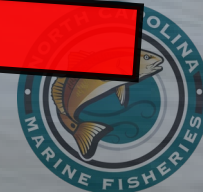
Negative  
perception

Litigation

Economic  
benefits

Encourage  
development

**Balancing Act!!**



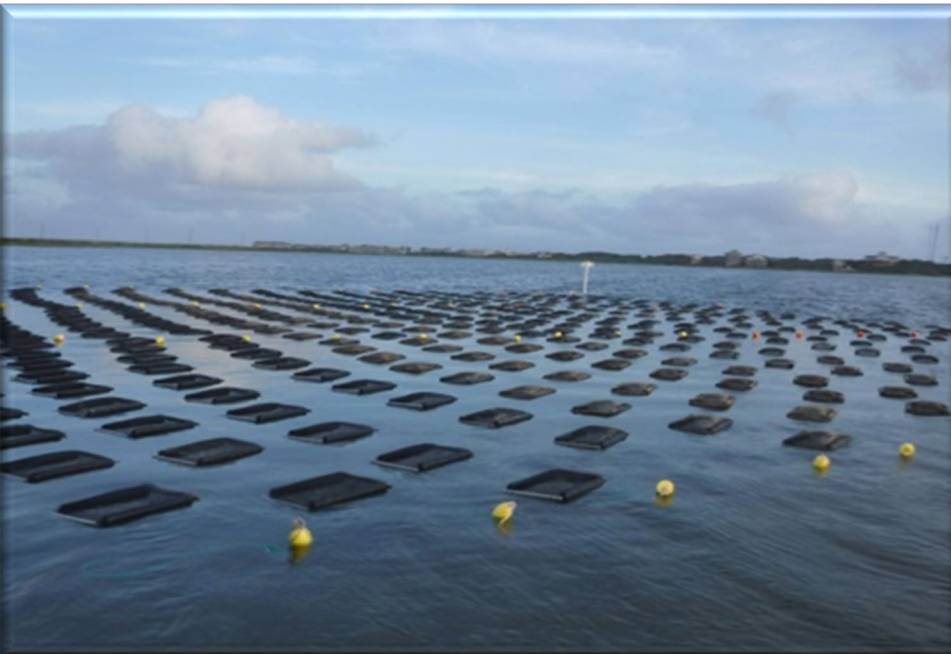


# *Shellfish Lease and Aquaculture Program*

## **Legislative Update**

### Session Law 2019-37 (Shellfish Aquaculture Bill)

- An act to provide further support to the shellfish aquaculture industry in North Carolina
- Includes requirements for adopting rules





# *Shellfish Lease and Aquaculture Program*

## **Legislative Update**

User Conflict  
Study

Pamlico Sound  
Pilot Project

Increase  
Production  
Requirements

Transplanting  
of Seed  
Prohibited  
Waters

## **Shellfish Aquaculture Bill**

Shellfish  
Aquaculture  
Enterprise  
Areas

Shellfish  
Cultivation  
Lease Review  
Committee

Terminated  
Leases and  
Gear Cleanup

# *Shellfish Lease and Aquaculture Program*

## **Legislative Update**

### **Shellfish Cultivation Lease Review Committee (SCLRC)**

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#### **Purpose:**

- To determine appropriateness of a contested case hearing for a person other than a shellfish lease applicant who is aggrieved by a shellfish lease decision
- Three members appointed by the MFC Chair
  - One MFC member who serves as the hearing officer
  - Two public members
    - One with expertise or other relevant experience in shellfish aquaculture
    - One with expertise or other relevant experience with respect to coastal property or property assessment



# Shellfish Lease and Aquaculture Program

## Legislative Update

July 1, 2019

| Type                | Production | Prior (per acre)                    | After (per acre)   |
|---------------------|------------|-------------------------------------|--|
| <i>Bottom</i>       | Produce:   | 10 bu.                              | 20 bu.   |
|                     |            | <b>AND</b>                          | <b>OR</b>  |
|                     | Plant:     | 25 bu. seed <b>OR</b> 50 bu. cultch | 15,000 seed: <i>Extensive</i><br>23,000 seed: <i>Intensive</i> |
| <i>Water Column</i> | Produce:   | 40 bu.                              | 50 bu.   |
|                     |            | <b>OR</b>                           | <b>OR</b>  |
|                     | Plant:     | 100 bu. seed <b>OR</b> cultch       | 23,000 seed  |

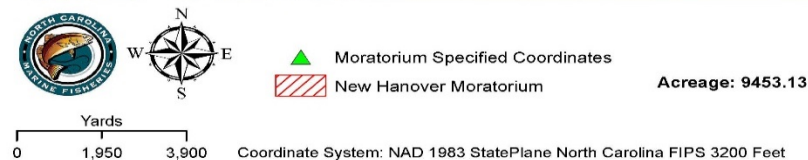
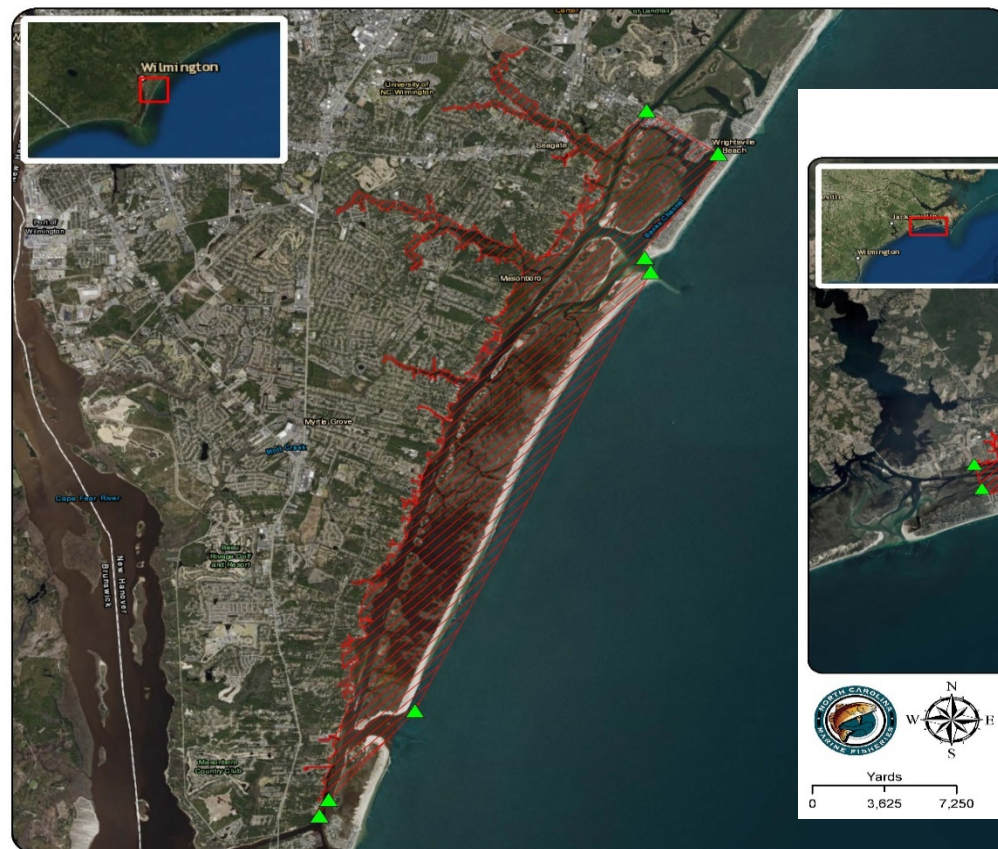
- *Extensive*: traditional cultch on bottom
- *Intensive*: use of any gear type bottom or floating



# Shellfish Lease and Aquaculture Program Legislative Update

## New Hanover County Area Moratorium

Date: 7/8/2019



## Bogue Sound Moratorium

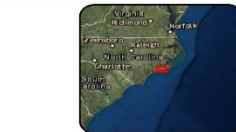
Date: 6/26/2019



▲ Moratorium Specified Coordinates  
▨ Bogue Sound Moratorium

Acreage: 25113.15

Coordinate System: NAD 1983 StatePlane North Carolina FIPS 3200 Feet



# *Shellfish Lease and Aquaculture Program*

## **Rules Update**

### **User Conflict Study rule changes to reduce user conflicts**

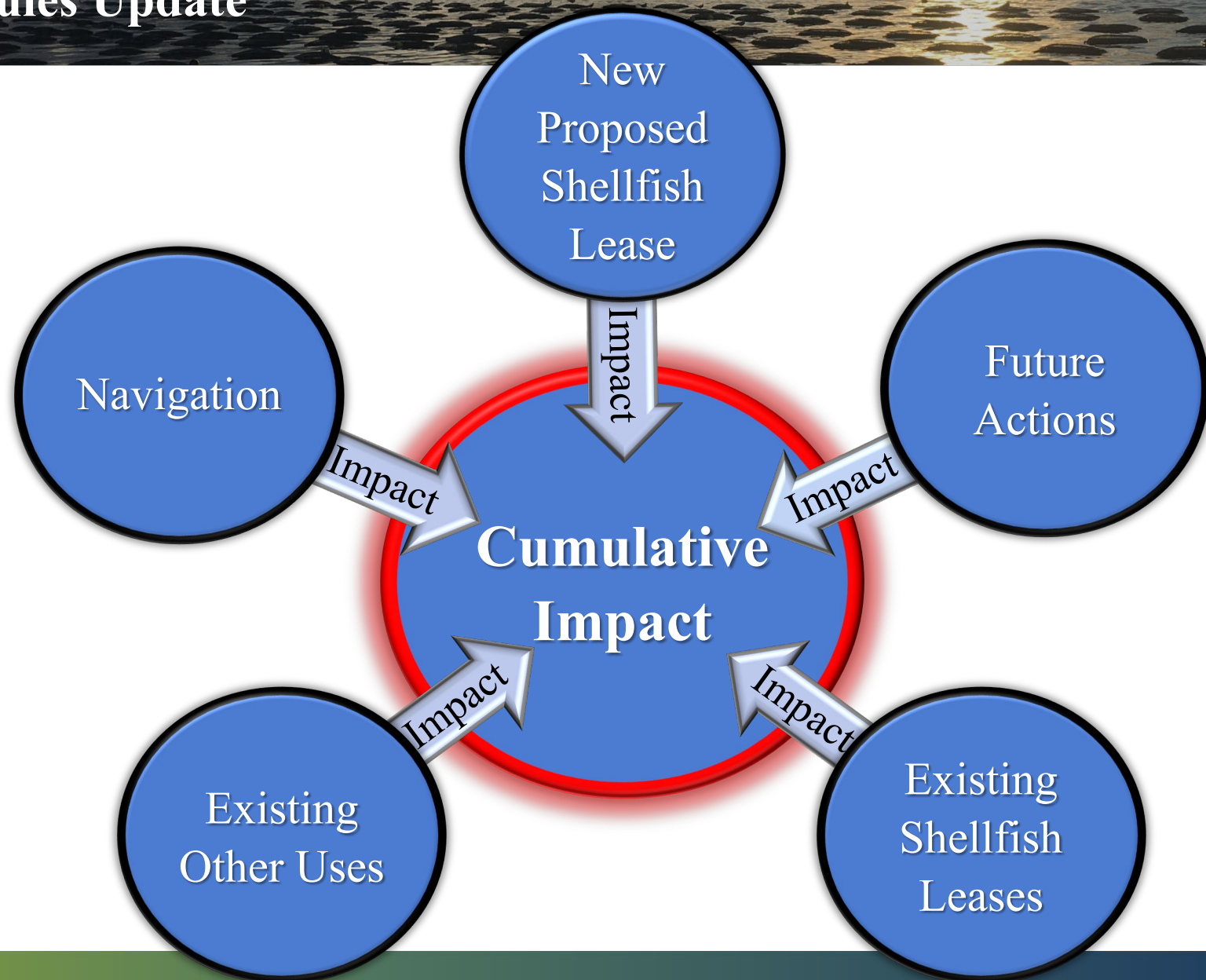
1. Add shellfish lease cumulative impact language
2. Add 250-foot buffer between shellfish leases
3. Increase 100-foot buffer from developed shorelines to 250 feet
4. Enhance training requirements to include user conflict information
5. Modify marking requirements for visibility/navigation concerns:
  - a. Max of eight corner markers from 3-inch to 12-inch diameter
  - b. Yellow light reflective tape





# *Shellfish Lease and Aquaculture Program*

## **Rules Update**





# *Shellfish Lease and Aquaculture Program*

## **Current Efforts**

- User Conflict Study – recommendations
- Shellfish Aquaculture Enterprise Areas (SEAs)
  - SEAs Moratorium Areas Study
- Shellfish Aquaculture Storm Management Plan
- Further recommendations for rule and/or statute changes
- Cumulative impact language implementation plan



# *Shellfish Lease and Aquaculture Program*

## **Current Efforts**

- Assess Pamlico Sound Shellfish Aquaculture Pilot Project
- Interstate Aquaculture Workgroup
- Inventory state aquaculture information
- Shellfish Aquaculture Training Program
- Collaboration and stakeholder outreach
- Continue important partnerships (NC Sea Grant, CCC, NOAA, NCCCF)





# Shellfish Lease and Aquaculture Program:

<http://portal.ncdenr.org/web/mf/habitat/enhancement/shellfish-leases>

## Shellfish Aquaculture Tool:

<https://arcg.is/0LD5zS>

## Frequently Asked Questions (FAQs):

<http://portal.ncdenr.org/web/mf/2020-shellfish-lease-faq>

## Contact Information:

**Owen Mulvey-McFerron**

Program Coordinator

Shellfish Lease Program

NC Division of Marine Fisheries

Office: 252-808-8061

Cell: 252-269-3082

**Marla Chuffo**

Administrative Specialist I

Shellfish Lease Program

NC Division of Marine Fisheries

Office: 252-808-8048

Cell: 252-725-0804

**Teri Dane**

Conservation Biologist I

Shellfish Lease Program

NC Division of Marine Fisheries

Office 252-808-8167

Cell: 252-725-0675

[DMF.Leasingshellfish@ncdenr.gov](mailto:DMF.Leasingshellfish@ncdenr.gov)