

# Oyster Mariculture Priorities for the Next Five Years

*Facilitator:* Sara Mirabilio, North Carolina Sea Grant

*Panelists:* N.C. Senator Bill Cook (R), District 1

Marc Turano, Pentair Aquatic Eco-Systems, Inc.

Jay Styron, Carolina Mariculture Co., University of North Carolina Wilmington, & President of N.C. Shellfish Growers Association

Brian Conrad, N.C. Division of Marine Fisheries

Patti Fowler, N.C. Division of Marine Fisheries, Shellfish Sanitation



North Carolina  
**Oyster Summit**

Promoting a Healthy Coastal  
Environment and Economy

March 10 & 11, 2015

N.C. Museum of Natural Sciences | Raleigh, NC

# North Carolina Shellfish Lease Program



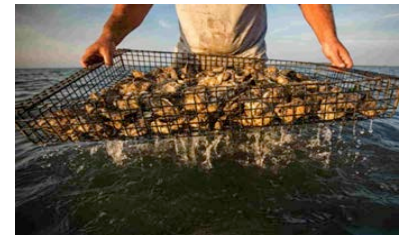
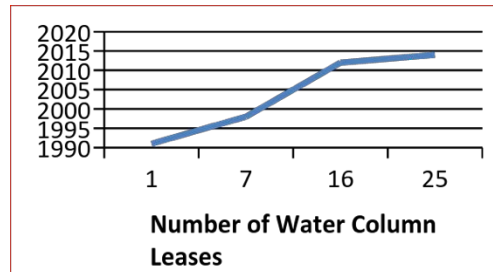
Brian Conrad  
NC Division of Marine Fisheries

March 11, 2015

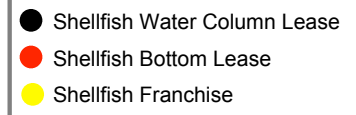
# North Carolina Shellfish Lease History



- The State of North Carolina has provided for the private use of public trust waters to North Carolina residents for the commercial production of shellfish on leased bottom since 1858.
- February 2015: 182 shellfish leases existed on 1208 acres.
- In 1989 legislation was enacted to allow the use of the water column above existing shellfish leases. The first water column lease was issued in 1991.
- 1998 – 7 water columns
- 2012 – 16 water columns
- 2015 – 25 water columns



# North Carolina Shellfish Lease Program



## Shellfish Lease Fees

- Bottom Lease Application : \$200.00
- Bottom Lease Rental (per acre per year): \$10.00
- Bottom Lease Renewal (5 year contract): \$100.00
  
- Water Column Lease Application: \$100.00
- Water Column Rental (per acre per year): \$100.00
- Water Column Renewal (5 year contract) \$100.00



# North Carolina Shellfish Lease Program

County	Bottom Leases	Bottom Lease Acreage	Franchises	Franchise Acreage	Water Columns	Water Column Acreage	Bottom Lease Applications	Lease Applications Acreage	Water Column Applications	WC Applications Acreage
Beaufort	2	5.5	0	0	2	5.5	0	0	0	0
Carteret	70	285.33	2	2.38	11	29.32	1	0.5	2	3.68
Dare	7	27.75	0	0	4	21.08	0	0	0	0
Hyde	14	187.76	9	236.49	1	1.66	0	0	1	1
New Hanover	2	4.38	1	3.13	1	2.03	0	0	0	0
Onslow	49	437.84	28	203.84	3	3.99	2	10	0	0
Pamlico	7	37.55	11	73.82	2	10	6	33.91	5	24.6
Pender	31	221.89	0	0	1	2	1	2	0	0
<b>Totals</b>	<b>182</b>	<b>1208.00</b>	<b>51</b>	<b>519.66</b>	<b>25</b>	<b>75.58</b>	<b>10</b>	<b>46.41</b>	<b>8</b>	<b>29.28</b>



2013 North Carolina Private Culture Production				
Species	Bottom Culture (Bu)	# Leases Reporting Harvest	Water Column (Bu)	# Leases Reporting Harvest
Oysters	7741	93	451	8
Clams	4172	87	702	2
Blood Clams	6.9	16	0	0

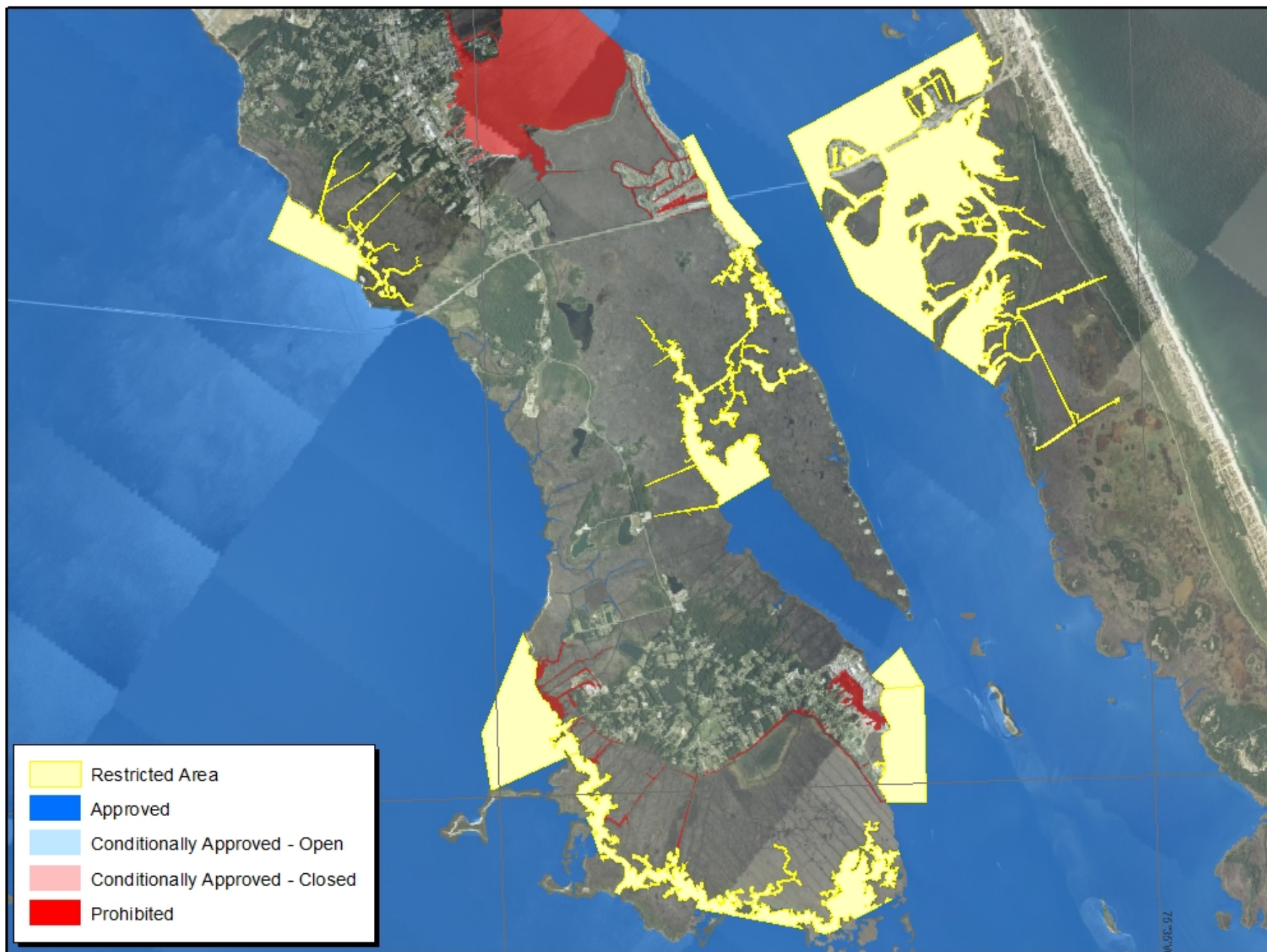
# **Improvements that have been made to the Shellfish Lease Program:**

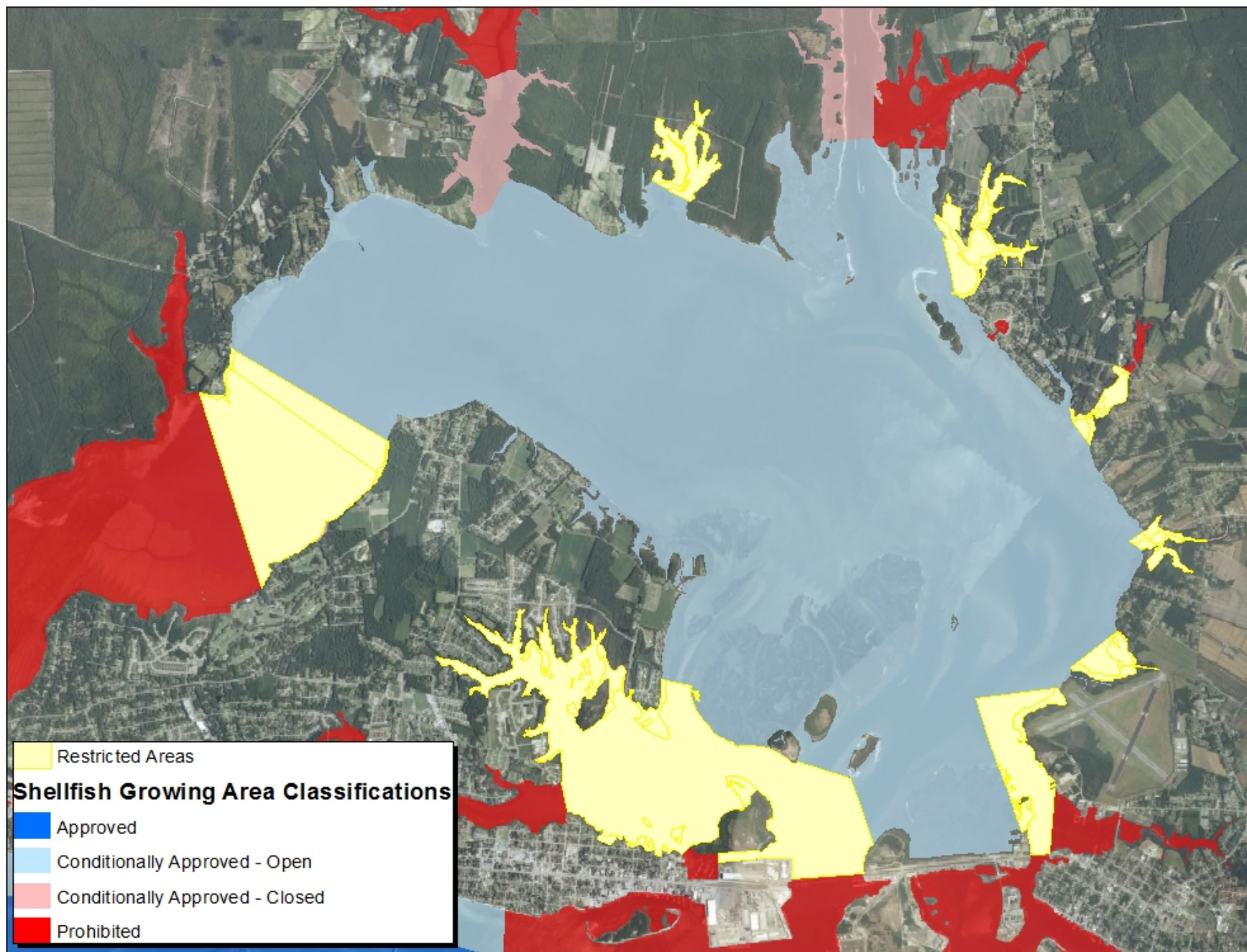
- Lease application process reduced to 2-3 months instead of 9-15 months (2012)
- Applicants now can fax, email, mail or hand deliver applications. (2013)
- Applicants are no longer required to have permit applications notarized. (2013)
- For lease specific permits, applicants may list multiple leases on a single application for a specific permit. The work load now rests with NCDMF staff in processing individual permits and not on the applicant. (2013)
- Lease/franchise specific permit fields have been standardized. (2013)
- All conditions, rules and reporting forms are mailed out with permit applications (2013)
- Renewal permit applications are mailed with the applicants information already listed on the application. The applicant need only review, make any applicable changes, and return the application. (2013)
- Rules and conditions now printed on back of each issued permit. (2013)
- Website with Lease Information, Applications and Permit Applications. (2014)
- Creation of 2 new Seed Oyster Management Areas (SOMA) in New River area. (2014)
- Aquaculture Seed Transplant Permit (instate transplant of seed from nurseries in polluted waters) (2014/2015)

## Issues currently being addressed through NCDMF Oyster Clam FMP process

- Define adverse impacts to submerged aquatic vegetation from shellfish leases and franchises
- Utilize GPS coordinates instead of a survey to define shellfish lease boundaries
- Formalize the policy for relay of shellfish to leases from closed areas
- Develop Aquaculture Seed Transplant permit
- Modify shellfish lease provisions (lease term, acreage limits, production requirements, sale/resale)
- Redefine off bottom culture
- Protection of shellfish lease and franchise rights (poaching/theft)
- Core Sound lease moratorium
- Brunswick County lease moratorium
- Eliminate Shellfish License and require all shellfish harvesters to have a Standard/Retired Commercial Fishing License.
- Consider requirement for shading of product







# *Vibrio vulnificus*

## *Vibrio parahaemolyticus*

- Single cell bacteria found worldwide
- Environmental, naturally occurring
- Brackish and salt water
- Greater populations occur in warmer months
- Can concentrate in molluscan shellfish



# *Vibrio vulnificus*

- Environmental, Naturally Occurring
- Generally found in <28 ppt salinity in warmer water
- Multiplies rapidly above 55°F
- Serious infections almost exclusively those with compromised immune systems.
- Sepsis infections are rare and sporadic but can be fatal
  - Ingestion (primarily raw or undercooked shellfish)
  - Wound (NC cases)



## CONSUMER ADVISORY

Eating raw, or undercooked *oysters, clams or mussels* may cause severe illness. People with the following conditions are at especially high risk: liver disease, alcoholism, diabetes, cancer, stomach or blood disorder, or weakened immune system. Ask your doctor if you are unsure of your risk. If you eat raw, or undercooked shellfish and become sick, see a doctor immediately.

N.C. DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES  
DIVISION OF ENVIRONMENTAL HEALTH

DENR 4004  
Environmental Health Services Section



- Evaluate Shellfish Water Classifications for Mariculture Activities
- Use-Restoration Waters
- Public Health Message - Vibrios



# **CLOSED AREA**

UNLAWFUL TO TAKE OYSTERS,  
CLAMS, OR MUSSELS.  
SHELLFISH MAY CAUSE  
SERIOUS ILLNESS IF EATEN.



**NC MARINE FISHERIES**