

# Current Status of Shellfish Industry Development in Delaware



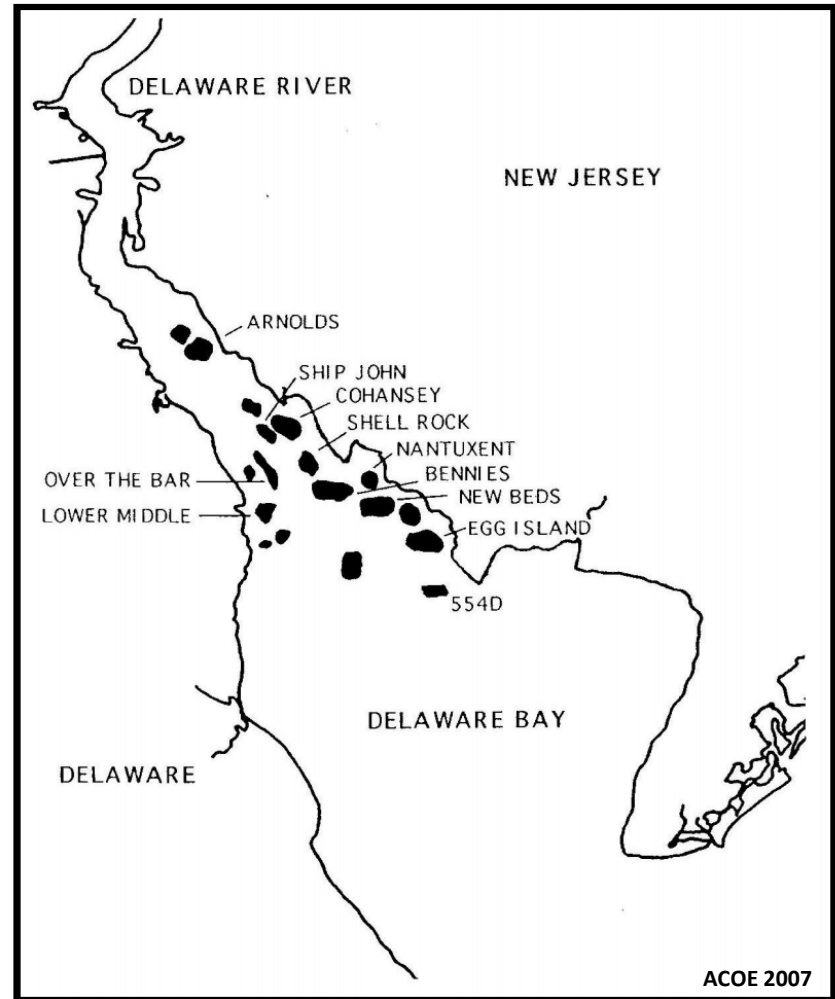
Delaware Estuary Science & Environmental Summit  
Cape May, New Jersey January 25-28, 2015



# Current Status of Shellfish Industry Development in Delaware



**Figure 2.1.** Map of Delaware Bay showing the locations of oyster beds.





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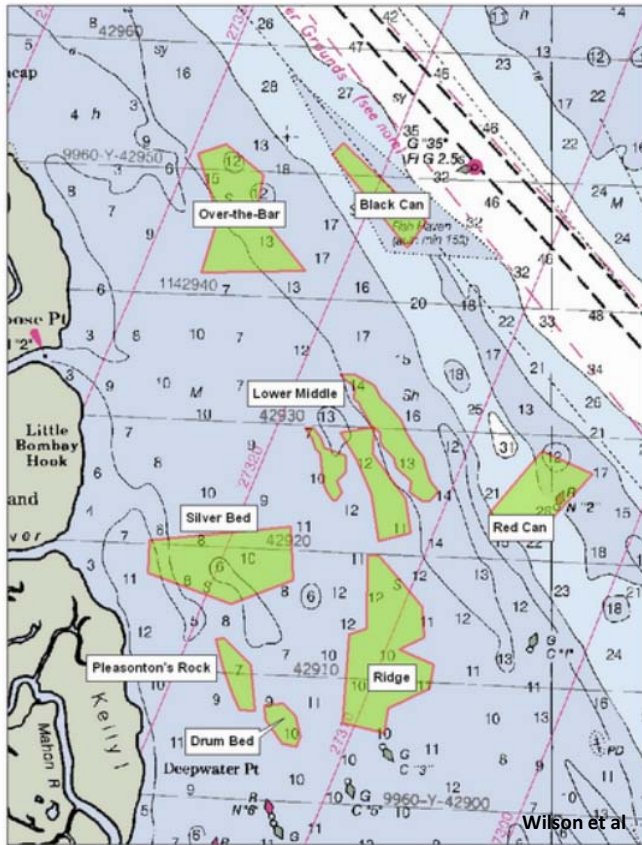


Figure 1. Location of Delaware's natural oyster seed beds in the Delaware Bay.

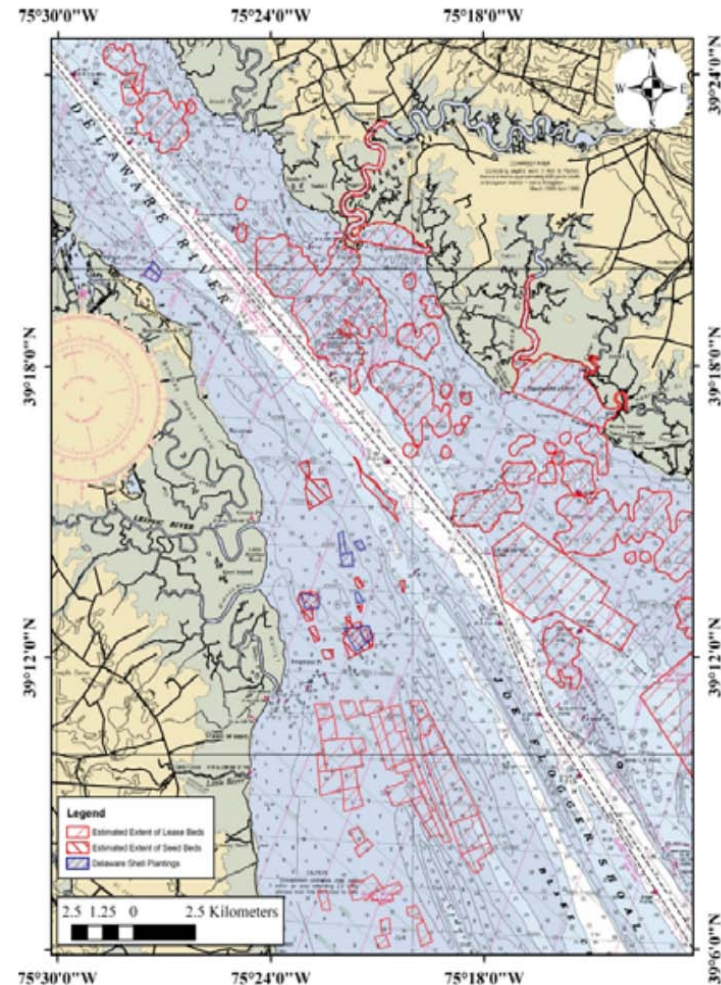
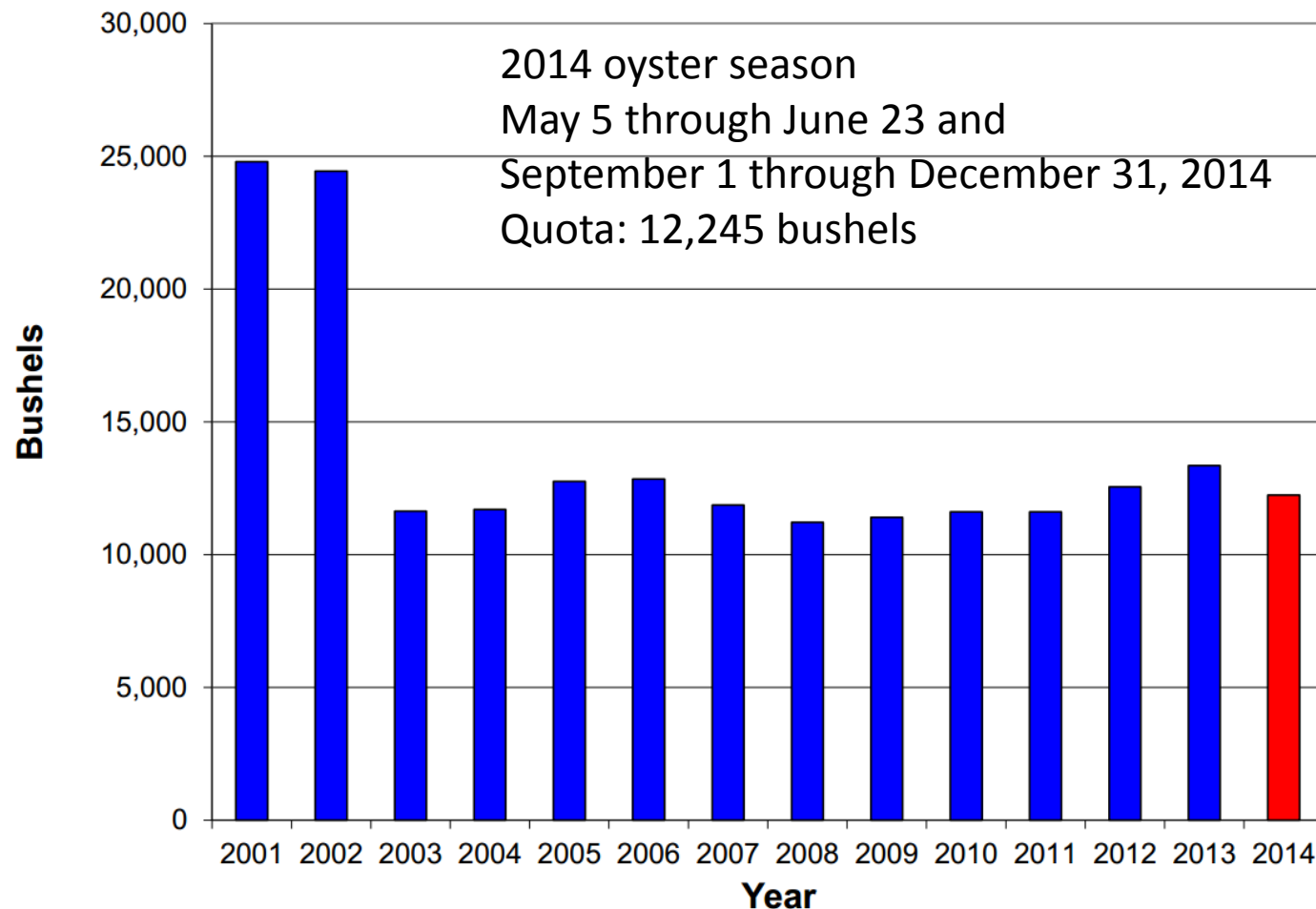


Figure 2. Location of Delaware shell plantings, estimated oyster seed and lease beds in the mid- Delaware Bay.

Wilson et al

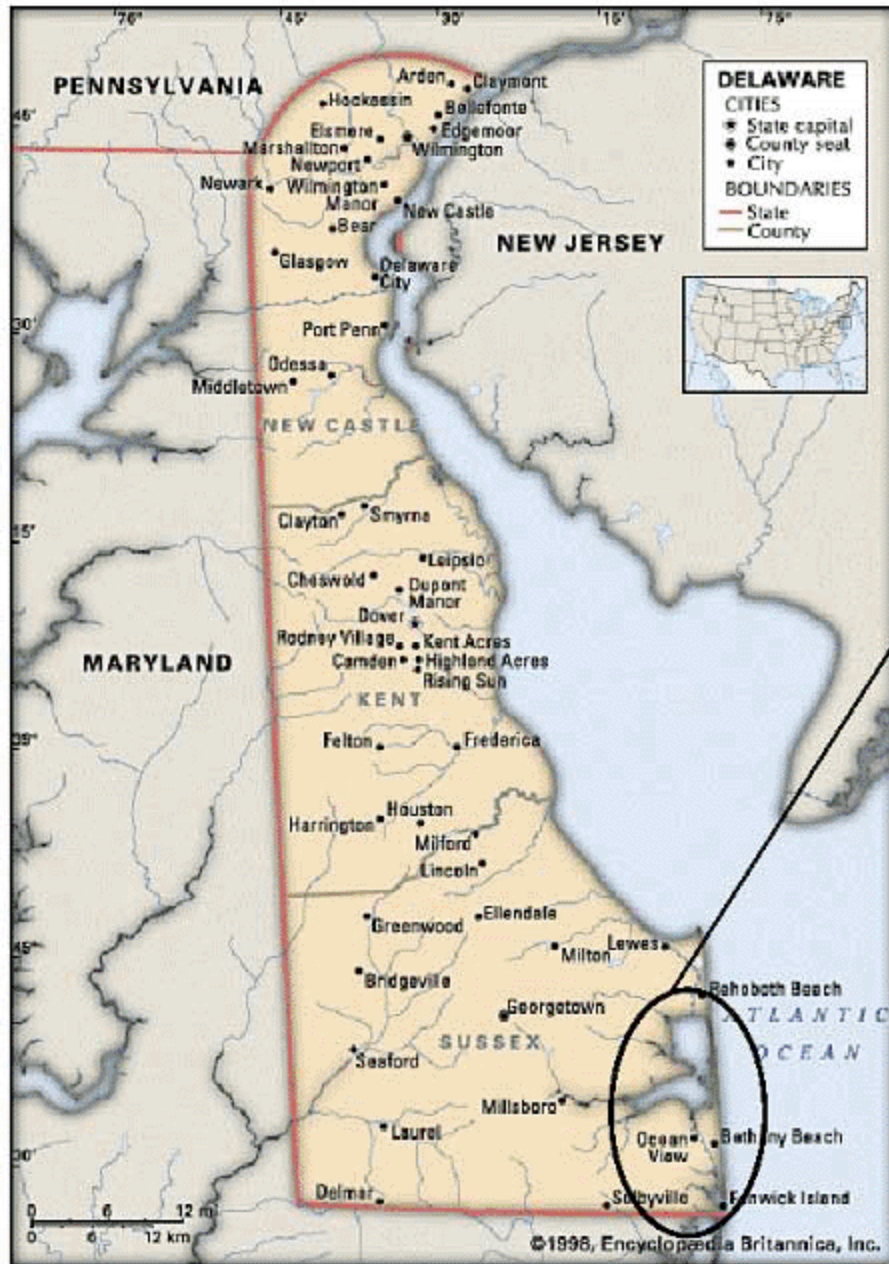
# Current Status of Shellfish Industry Development in Delaware

**Annual Oyster Quota 2001-2014**

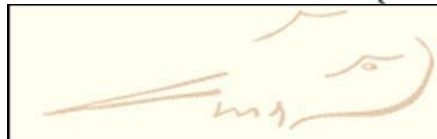
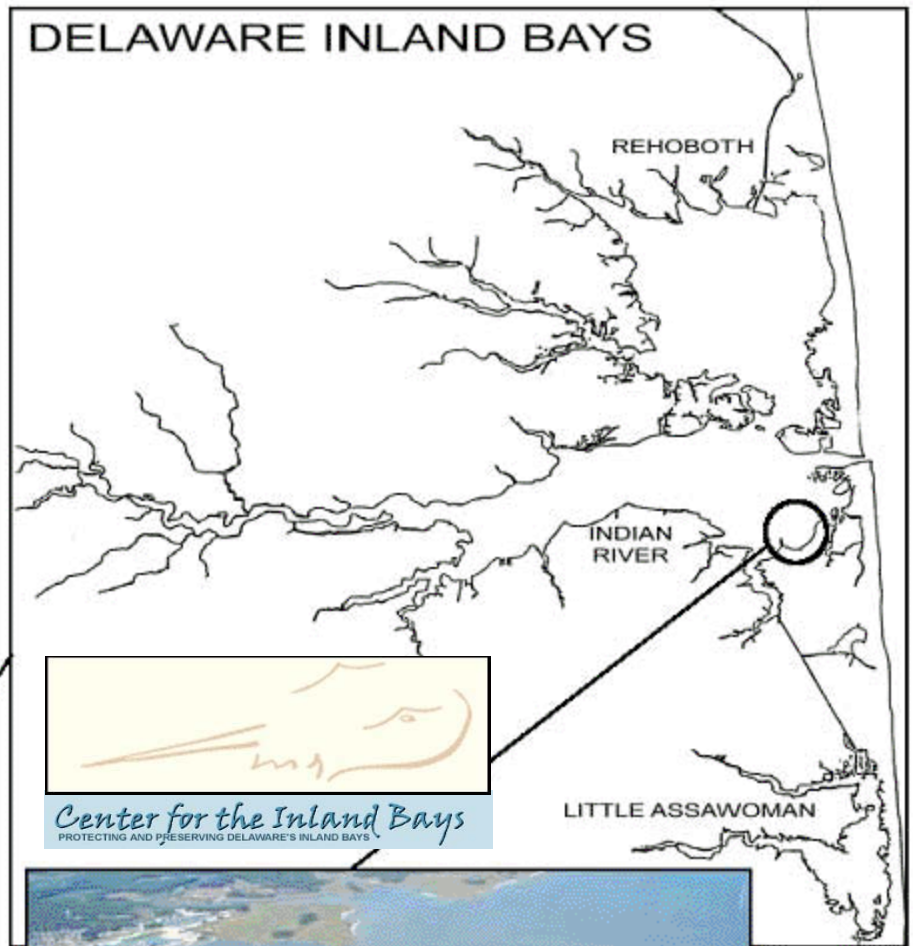


DNREC





## DELAWARE INLAND BAYS



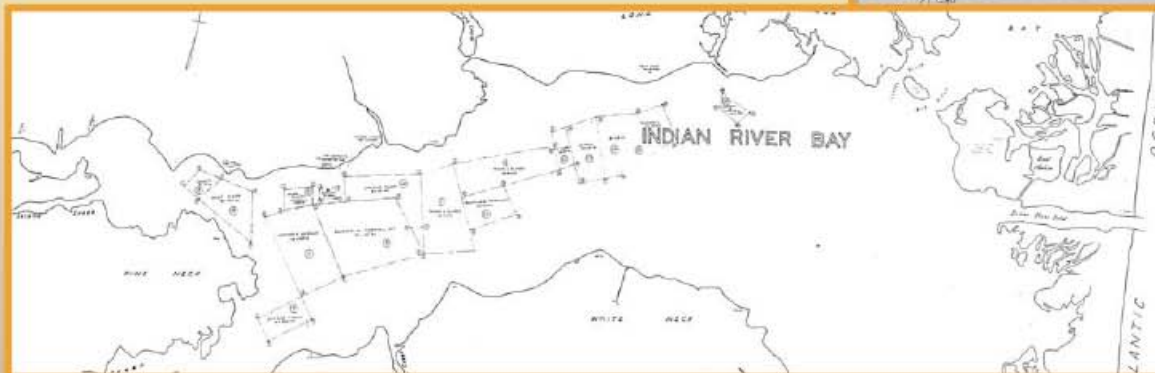
*Center for the Inland Bays*  
PROTECTING AND PRESERVING DELAWARE'S INLAND BAYS



James Farm Ecological Preserve on Indian River Bay

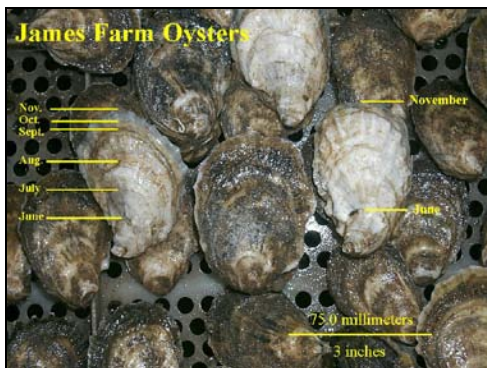
## OYSTERING RETURNS AFTER THE INLET IS STABILIZED WITH LARGE AREAS OF BAY BOTTOM BEING LEASED.

- In 1948, more than 3,164 acres (34%) of Rehoboth Bay and 1,143 acres of Indian River Bay (13%) was leased for oyster production grounds.
- DE Commission of Shellfisheries promoted the use of the Bays for this purpose.





# Shellfish Field Research, Demonstration & Restoration 1998-2015



## Year

1998 - 01 Characterize Seasonal growth & survival

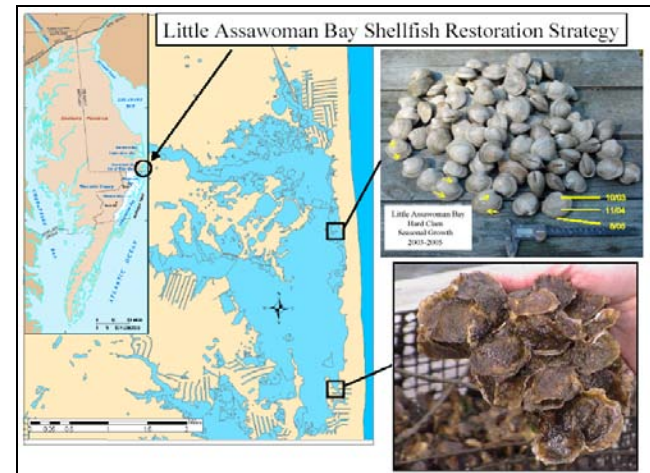
2001 & 04 Shellfish pathogen surveys

2001 - 06 Establish & monitor a pilot scale oyster reef

2002 - 03 L. Assawoman Bay shellfish stock assessment

2003 - 2015 Oyster gardening program

2005 - 2013 IB Oyster Habitat/Restoration Research





# Learn more about Aquaculture Opportunities in the Inland Bays

The Inland Bays watershed has long relied on conventional industries like agriculture and tourism to generate our local economy. As the demand for protein-rich seafood increases, many look to aquaculture as a sustainable segment of non-traditional food production that also presents new economic opportunities for southern Delaware.

**This workshop will explore whether commercial shellfish production in Delaware's Inland Bays is a reasonable expectation.**



"Delaware waters are a native habitat for oysters; humans living in the region have enjoyed Delaware oysters for thousands of years. Despite decades of decline, oysters do have a new future in Delaware. With science and good management, oyster production can be, and should be, encouraged and nurtured to resume its place as an important food crop, much the same as peaches, lima beans and chickens are now identified with our state. Oysters are also a keystone species responsible for a host of ecosystem services, such as water quality improvement because of their capacity for filtration."

—Ed Kee, Secretary of the Delaware Department of Agriculture



The Delaware Center for the Inland Bays, a non-profit National Estuary Program with operations in Rehoboth Beach, Delaware, is partnering with sponsors including Delaware Sea Grant Marine Advisory Service, Delaware Department of Natural Resources and Environmental Control (DNREC) and UD Sustainable Coastal Communities Program to host this one day informational workshop concerning shellfish aquaculture in Delaware's Inland Bays.



Delaware Center for the Inland Bays

For more information, contact E.J. Chalabala  
302-226-8105 or visit [www.inlandbays.org](http://www.inlandbays.org)

Cover photo from the University of DE

♻️ Printed on recycled paper made with 30% postconsumer waste and printed with soy inks.

# Shellfish Aquaculture in the Inland Bays

Status, Opportunities and Constraints  
One-Day Workshop

Saturday, June 18, 2011

8:00 a.m.—4:00 p.m.

University of Delaware Virden Center  
700 Pilottown Road, Lewes, Delaware





# Current Status of Shellfish Industry Development in Delaware

Stakeholder Work Group aka CIB “Tiger Team” (2012)

Broad representation (private and public)

Coastal Marine Spatial Planning

Review legal/regulatory framework

Identify Socio-economic issues

Consensus and legislative initiative



## Human-Use Data

### Legend

-  High Density Boat Slips
-  Public/Private Boat Ramps
-  Marinas
-  Navigational Channels
-  Stationary Boats
-  Boats in Motion

2 1 0 2 Miles

3 1.5 0 3 Kilometers



**Oyster Aquaculture  
Tiger Team**



# Current Status of Shellfish Industry Development in Delaware



## Rehoboth Bay

### Tiger Team Recommended Aquaculture Lease Areas

#### Legend

Recommended Aquaculture Lease Areas

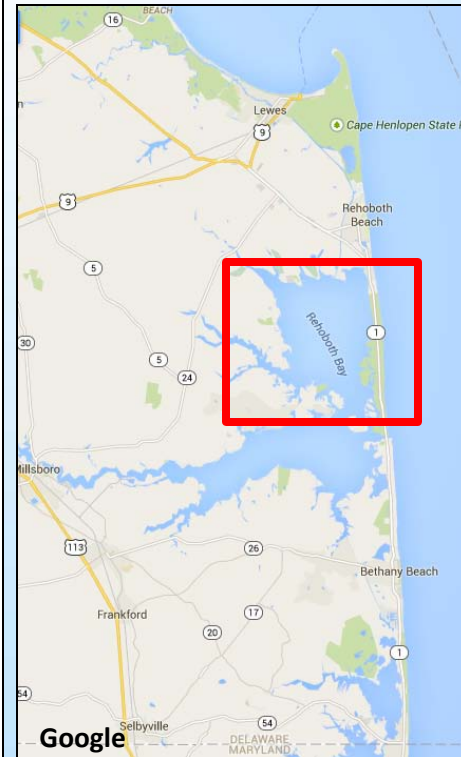
Total Area in Rehoboth Bay:

261 Acres

2.8% of the total Rehoboth Bay area

1 0.5 0 1 Kilometers

1 0.5 0 1 Miles



CIB 2013

# Current Status of Shellfish Industry Development in Delaware



## Indian River Bay

### Tiger Team Recommended Aquaculture Lease Areas

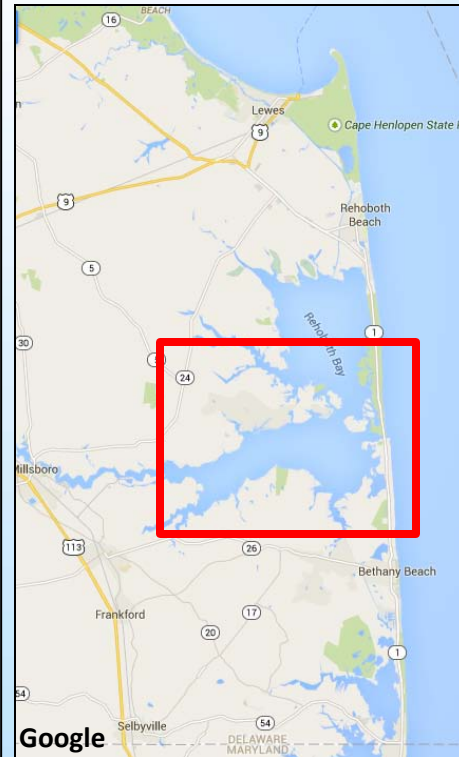
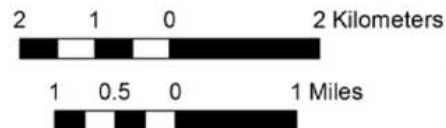
#### Legend

Recommended Aquaculture Lease Areas

Total Area in Indian River Bay:

125 Acres

1.3% of the total Indian River Bay area



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# Current Status of Shellfish Industry Development in Delaware



## Little Assawoman Bay

### Tiger Team Recommended Aquaculture Lease Areas

#### Legend

Recommended Aquaculture Lease Areas

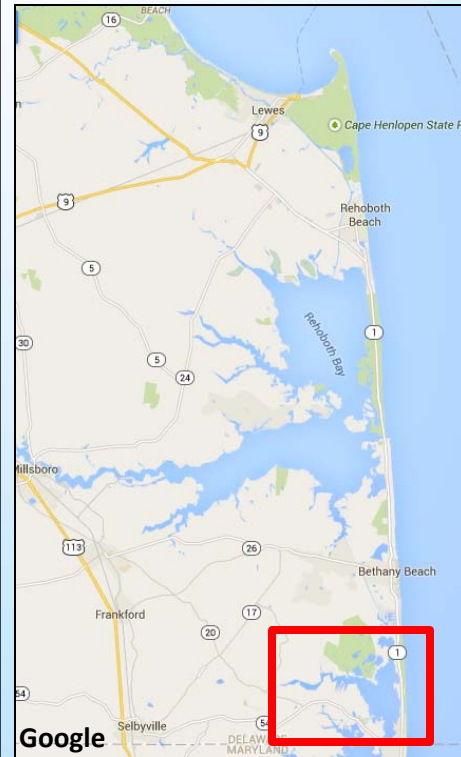
Total Area in Little Assawoman Bay:

227 Acres

10% of the total Assawoman area

1 0.5 0 1 Kilometers

0.5 0.25 0 0.5 Miles



CIB 2013

# Current Status of Shellfish Industry Development in Delaware

[<WORKING DRAFT, NOT FOR DISTRIBUTION>](#)



[HOME](#) > [TITLE 7](#)

[§ 1901§ 1902§ 1903§ 1904§ 1905§ 1906§ 1907§ 1908§ 1909§  
1910§ 1911§ 1912§ 1913§ 1914§ 1915§ 1916§ 1917§ 1918§ 1919§  
1920](#)

## **TITLE 7**

### **Conservation**

#### **Shellfish**

##### **CHAPTER 19. GENERAL PROVISIONS**

##### **§ 1901. Definitions.**

The following definitions shall apply to Chapters 19 through 28 inclusive of this title:

- (1) "Bivalve shellfish" means any species of shellfish having two shells connected by a hinge.
- (2) "Commercial purpose" means a person's intent to sell shellfisheries to another.
- (3) "Crab pot" means a cube shaped wire device that contains opening or openings toward the inside for the entrance and capture of crabs without the assistance of any manually exerted tension to any closing mechanism.
- (4) "Culled" means separated live shellfish from all other material and organisms.
- (5) "Cultivation" means the process of preparing and/or improving shellfish grounds to foster the growth and survival of shellfish.



[HOME](#) > [TITLE 7](#)

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Version updated on 2/14/2013 was Approved by Tiger Team Policy Subcommittee

## **TITLE 7**

### **Conservation**

#### **Shellfish Aquaculture in Delaware's Inland Bays**

##### **CHAPTER 20. GENERAL PROVISIONS**

##### **§ 2001. Definitions.**

The following definitions shall apply to Chapters 19 through 28 inclusive of this title:

- (1) "Bivalve shellfish" means any species of shellfish having two shells connected by a hinge.
- (2) "Certified dealer" shall mean anyone who is certified by the Department as being qualified to sell shellfish products.
- (3) "Department" means Department of Natural Resources and Environmental Control.
- (4) "Delaware's Inland Bays" shall mean Rehoboth Bay, Indian River and Indian River Bay, Little Assawoman Bay, and Big Assawoman Bay and their respective tidal tributaries.
- (5) "Delaware partnership" shall mean a partnership comprised of at least 50% Delaware residents. If fewer than 50% of a partnership is comprised of Delaware residents, then the partnership shall be considered a non-resident partnership.
- (6) "Delaware corporation" shall mean a corporation [or other legal entity](#) whose ownership or Board of Directors is comprised of 50% or





**HB160 "AN ACT TO AMEND TITLE 3 AND TITLE 7 OF THE DELAWARE CODE RELATING TO AQUACULTURE"**  
**August 28, 2013**

# Current Status of Shellfish Industry Development in Delaware

## Delaware Code Chapter 20

"Shellfish grounds for the purposes of this chapter" means the submerged lands of Delaware's Inland Bays and their tributaries capable of sustaining shellfish under the jurisdiction of the State.

**§ 2002. Duties of Department; powers; making and enforcing regulations.**

- **Administration (applications, fees, enforcement)**
- **Eligibility and lease approval and denial criteria**
- **Siting and operations (abandonment, transfer)**
- **Marking requirements (leases and equipment)**
- **Vessel inspection and equipment approval**



# **Current Status of Shellfish Industry Development in Delaware**

## **Delaware Code Chapter 20**

- **Eligible species and (genetic) stock approval**
- **Seed importation criteria and bio-security**
- **Seafood Safety (harvesting, handling, transportation, processing, production and sale)**
- **Protection of wild shellfish resources**

**Public Workshops: 1/30 & 2/26/2014**

**Public Hearing: 6/21/2014**

**Regulations effective: 8/11/2014**

# Current Status of Shellfish Industry Development in Delaware

## Potential Lessees (SADA)

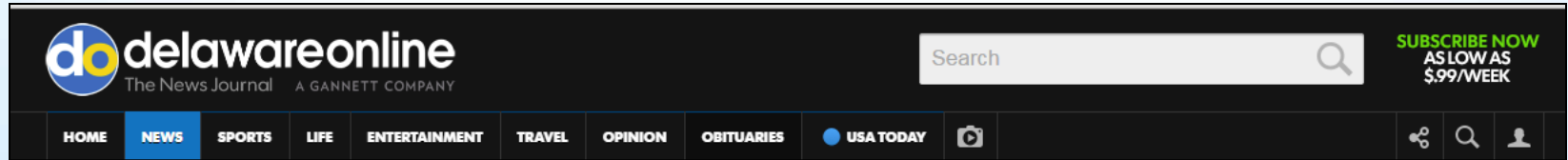


- Examine available acreage.
  - Determine which acres would work best with their planned operation.
- In the SADA will need (3.0):
  - Application
  - Field assessment
  - Performance bond
  - Liability coverage
  - Army Corps permit
  - Application and lease fees



# Current Status of Shellfish Industry Development in Delaware

NIMBY



**Oysters in our backyard? Not so fast** By Molly Murray, The News *October 3, 2014*

**Residents question aquaculture's economic benefits** By Molly Murray The News Journal *October 7, 2014*

**Oyster farming industry would harm Inland Bays** Delaware Voice: Steve Callanen *October 22, 2014*

**Coalitions prepared to fight aquaculture regulations** RACHAEL PACELLA, STAFF WRITER *December 27, 2014*

*"We all believe aquaculture is a great thing, it's just a bad, bad spot for it."*



# Current Status of Shellfish Industry Development in Delaware

COALITION TO  
SAVE BEACH COVE

[HOME](#) [ABOUT](#) [NEW EVENTS](#) [HELPFUL LINKS](#) [IN THE NEWS](#) [TAKE ACTION](#)

*The success of the struggle to Save Beach Cove*

## DEPENDS ON YOU

[LEARN MORE](#)

Communities working together to save Beach Cove for future generations

Beach Cove is in danger. Without intervention, a 29 acre area of Shellfish Aquaculture Industry will be installed as early as this fall - permanently affecting the environment, wildlife, navigation, recreation, and aesthetic of this beautiful resource. If we act now, we can save our Cove.



Photo taken of oyster aquaculture site with floating cages and markers similar to those proposed for Beach Cove.



The floating cages used for oyster aquaculture will create a major impediment to navigation & recreation.

[ABOUT THE PROPOSED OYSTER  
AQUACULTURE IN BEACH COVE](#)

[HOW YOU CAN HELP](#)

Ready to take the next step? You can make a difference in saving

[www.savebeachcove.com](http://www.savebeachcove.com)



# Current Status of Shellfish Industry Development in Delaware





# Current Status of Shellfish Industry Development in Delaware





# DE Aquaculture Permitting Currently

- ACOE PCN (Pre Construction Notification) submitted September
- Subsequent to the regulations becoming effective
  - Some homeowners around the Inland Bays felt the DE APA (Administrative procedure Act) process was unfair.
- They voiced their concerns to both DNREC and the Army Corps about the program. Concerns include:
  - SADA location
  - allowable gear types
  - working hours
  - Marking requirements
  - Limiting shellfish aquaculture in certain bay(s).
  - Etc.

# Army Corps Process

- Will post a PN (public notice) on their website with the proposed permitting.
- 30 days from the date of posting for comment
- After that?
  - The Army Corps will render some decision
    - Only 3% of permits are denied outright.
    - May require more time/more information/more public process/additional studies/some adjustments to the program
      - Based in part on comments received during the public notice, and comments from the other agencies



# Steps to Securing a Lease

*(based on the assumption of USACE permitting going through as requested)*

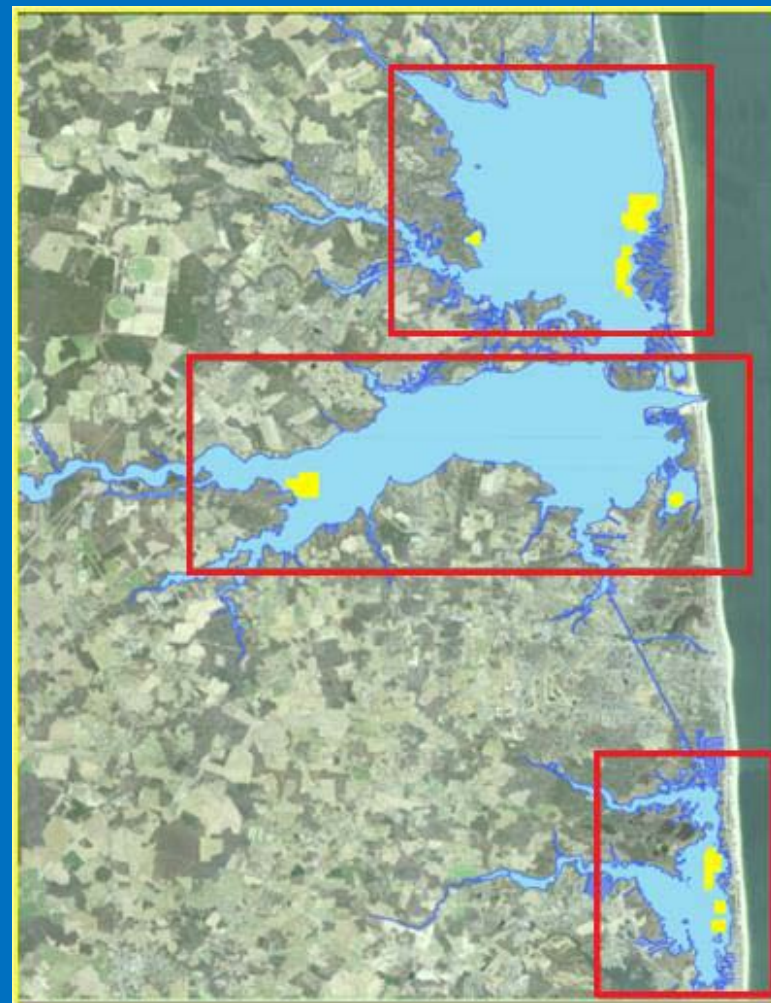
- DNREC DFW will receive in-SADA permitting from Army Corps.
- DFW will announce when initial lottery/leasing process to begin
  - Required press release and publication of legal notice in 2 newspapers at least 30 days before.
    - Applicants will be directed as to how to participate.
- The potential lessee would:
  - Identify bay/approx. area to lease
  - Create business and operations plan

# Securing a Lease Continued

- Initial Lottery (after initial lottery, leases will be first come/first serve basis).
- Application submitted
  - Application determination: complete/denied
- Testing of clam density by Department
  - Applicants in SADA can modify their operations plan and acreage (w/o adding acreage and re-submit within a year if initial requested acreage is determined to have an average of 2 or more hard clams per square yard (2.2/m<sup>2</sup>))
- Lease approved/denied
- USACE permitting
- Securing performance bond and liability insurance
- Lease executed
- Survey of boundaries and marking contracted by lessee or requested of Department
- Begin farming

# Shellfish Aquaculture in DE

- Assess time frame/locations/poss. requests from Corps after the Corps decision
- Time frame as of now?
  - Army Corps PN posting expected in near future.
  - Continue to work on clam sampling methodology and other aspects of the program.





# Current Status of Shellfish Industry Development in Delaware

## Resources

<http://darc.cms.udel.edu/ibsa>

The screenshot shows a web browser window with the address bar displaying [darc.cms.udel.edu/ibsa/](http://darc.cms.udel.edu/ibsa/). The page title is "Delaware Inland Bays Shellfish Aquaculture". Below the title, it identifies the "Delaware Sea Grant Marine Advisory Service, College of Earth, Ocean, and Environment" at the "Hugh R. Sharp Campus, University of Delaware, 700 Pilottown Road, Lewes, DE 19958". A paragraph states the site is maintained by the DSGMAS Aquaculture and Fisheries Specialist as an educational resource. Contact information for John W. Ewart is provided. A list of "Other Links" includes Calendar, Organizations and Agencies, Equipment, Supplies and Services, Publications, Websites and Other Media. A "What's New?" section lists events: a December 3, 2014 workshop on shellfish culture and DNREC regulatory process; a January 13, 2015 shellfish aquaculture program as part of Delaware Agriculture Week; and a January 14-16, 2015 meeting on bridging the Gulf in a changing environment. It also mentions a manual for aquaculture production hazards and a public hearing on aquaculture regulations. The footer includes logos for the Delaware Department of Fish and Wildlife, DNREC, and NOAA.

Delaware Inland Bays Shellfish Aquaculture

*Delaware Sea Grant Marine Advisory Service, College of Earth, Ocean, and Environment  
Hugh R. Sharp Campus, University of Delaware, 700 Pilottown Road, Lewes, DE 19958*

This site is maintained and continually updated by the Sea Grant Marine Advisory Service (DSGMAS) Aquaculture and Fisheries Specialist as an educational resource about Inland Bays shellfish aquaculture. It includes updates on the DNREC regulatory development process; technical, economic, and environmental information; links to other state shellfish aquaculture programs and industry activities; and links to information of interest for prospective shellfish growers, and local coastal community businesses and residents.

Please direct any questions, suggestions or comments about the Inland Bays Shellfish Aquaculture Page to  
John W. Ewart [ewart@udel.edu](mailto:ewart@udel.edu)  
Phone: 302-645-4060; Fax: 302-645-4213

[Delaware](#) \* [Maryland](#) \* [Virginia](#) \* [New Jersey](#) \* [Rhode Island](#)  
[Other Links:](#) [Calendar](#) \* [Organizations and Agencies](#) \* [Equipment, Supplies and Services](#) \* [Publications](#) \* [Websites and Other Media](#) \*

**What's New?**

December 3, 2014  
**Workshop: Shellfish Aquaculture 101 and Update on DNREC Regulatory Process.** 6-8 pm, Wednesday, Room 104 Cannon Lab, Hugh H. Sharp Campus, 700 Pilottown Road, Lewes, Delaware

January 13, 2015  
**Shellfish aquaculture program to be held as part of Delaware Agriculture Week.** 1-4 pm. State Fairgrounds, Harrington, Delaware

January 14-16, 2015  
**Bridging the Gulf in a Changing Environment.** A joint meeting of the [Northeast Aquaculture Conference & Exposition \(NACE\)](#) and Milford Aquaculture Seminar. Holiday Inn by the Bay, Portland, Maine. Program Topics Include Shellfish Culture Site Selection & Farm Modeling; Shellfish Farming 101; New Shellfish Gear; Shellfish Pathology Workshop; Business of Aquaculture: Business Planning 101; Financing Options; Risk Management; Marketing CSA's; Aquaculture Permitting Forum; Developing International Markets

[Northeastern U.S. Aquaculture Management Guide. A manual for the identification and management of aquaculture production hazards.](#) Northeastern Regional Aquaculture Center (NRAC). United States Department of Agriculture, National Institute of Food and Agriculture.  
Tessa L. Getchis, Editor. First edition, 2014. 285 p.

[Shellfish Aquaculture in Delaware's Inland Bays: Status, Opportunities, and Constraints.](#) July 2013

**Delaware**

**DNREC Division of Fish & Wildlife**  
[DNREC Shellfisheries Management Plan for Indian River, Indian River Bay and Rehoboth Bay.](#) (1979). Final Draft. March 15, 1979. 30p.

Division of Fish and Wildlife public workshop (Jan. 30, 2014) on Inland Bays shellfish aquaculture regulations  
[Welcome and agenda: Program background: Who, What, Where: Preliminary map of shellfish aquaculture areas](#)

Division of Fish and Wildlife's second public workshop (Feb. 26, 2014) on Inland Bays shellfish aquaculture regulations  
[Welcome and Agenda: Program Background: Presentation: Developing Shellfish Aquaculture Regulations](#)

PUBLIC HEARING TO ESTABLISH NEW REGULATIONS GOVERNING AQUACULTURE IN DELAWARE'S INLAND BAYS (7 DE ADMIN. CODE §3800 AQUACULTURE), TO WTT: 7 DE ADMIN. CODE §3801 SHELLFISH AQUACULTURE. May 21, 2014. Watershed Stewardship Building, 901 Pilottown Road, Lewes, DE 19958  
[Legal Notices: Shellfish Aquaculture: Proposed Permitting: Proposed Shellfish Aquaculture Development Areas](#)  
[Presentations: Background and Permitting: Development: Presentations: Summary of Proposed Regulations](#)

## Shellfish Aquaculture in Delaware's Inland Bays Status, Opportunities, and Constraints

Compiled and edited by

John W. Ewart  
Delaware Sea Grant Program  
College of Earth, Ocean and Environment (CEOE)  
University of Delaware  
700 Pilottown Road  
Lewes, DE 19958

In cooperation with

Delaware Center for the Inland Bays (CIB)  
Delaware Department of Natural Resources and Environmental Control (DNREC)

July 2013



# Current Status of Shellfish Industry Development in Delaware



Delaware Estuary Science & Environmental Summit  
Cape May, New Jersey      January 25-28, 2015

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Phone: (302) 645-4060; E-Mail: [ewart@udel.edu](mailto:ewart@udel.edu)  
Inland Bays Shellfish Aquaculture: [darc.cms.udel.edu/ibsa/](http://darc.cms.udel.edu/ibsa/)

