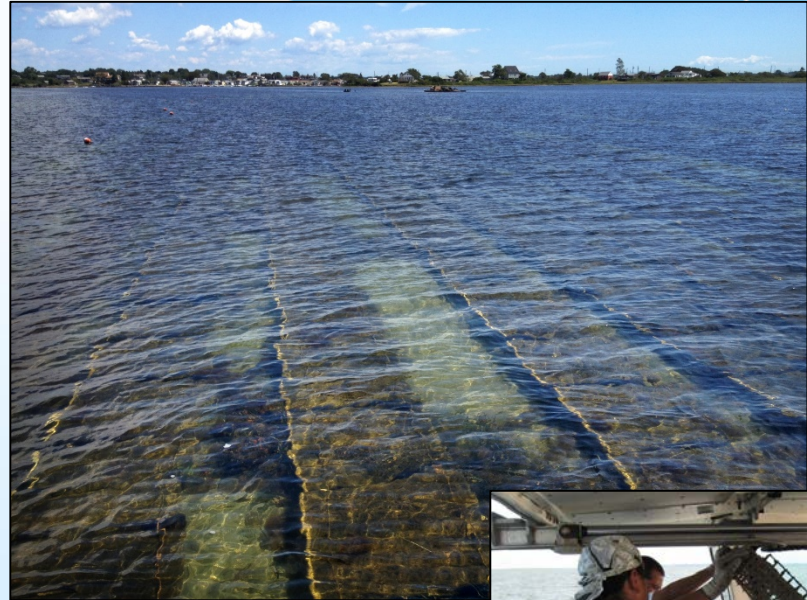


Shellfish Aquaculture Industry Overview



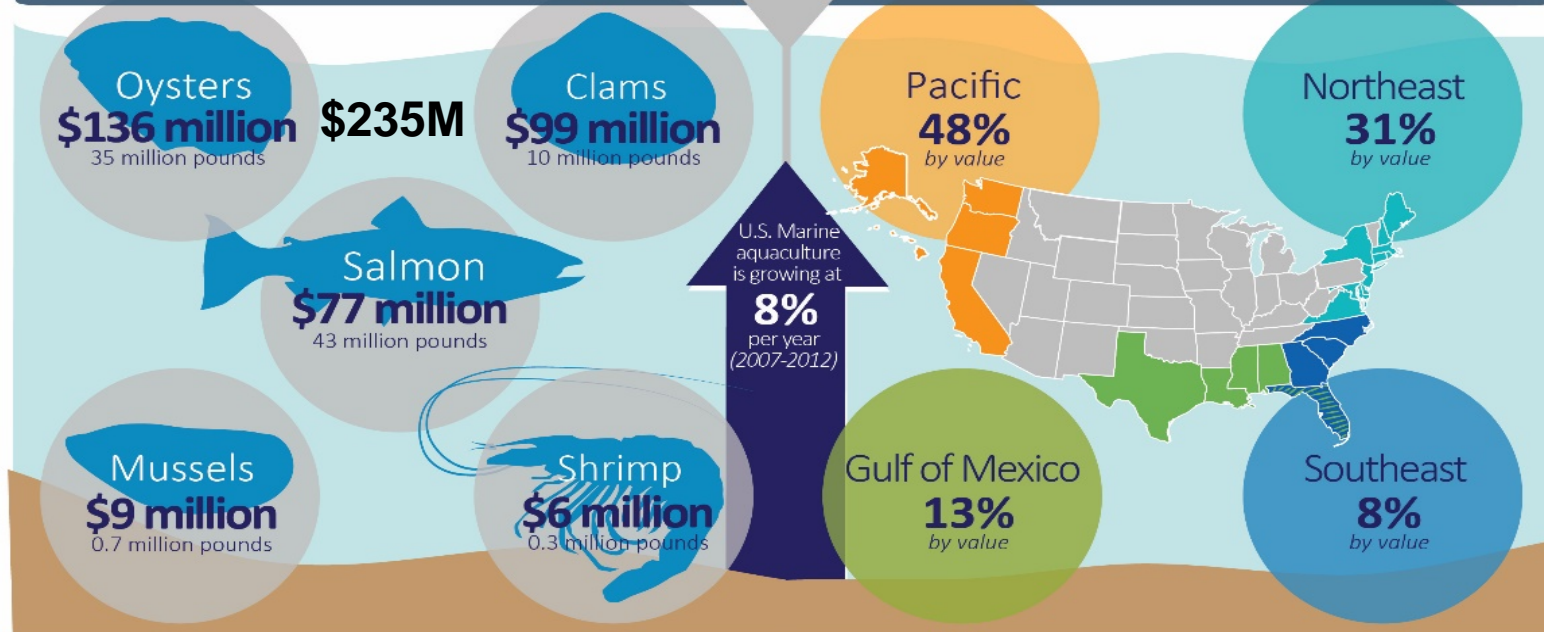
US Shellfish Aquaculture

2012 AQUACULTURE PRODUCTION VALUES



MARINE SPECIES HIGHLIGHTS

REGIONAL MARINE HIGHLIGHTS



UNIVERSITY OF DELAWARE
College of Earth, Ocean, & Environment

2013: \$245M



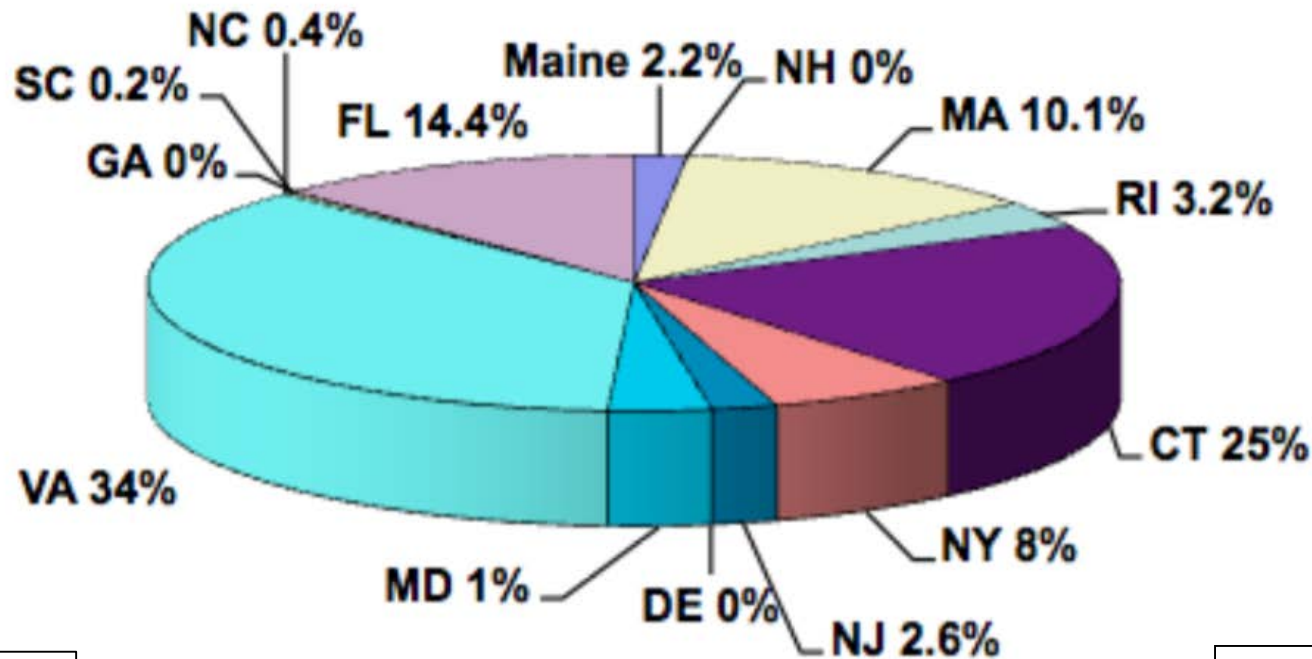
NOAA FISHERIES

US Shellfish Aquaculture



East Coast: Maine to Florida

**Shellfish Aquaculture by State
percent of total East Coast
\$154 million farm gate**



East Coast Shellfish Industry

- >1400 Farms From Maine to Florida
- Primarily Small Farms <Than 10 Employees
- Collectively Harvest \$157M Farm Gate Value
54% clams; 46% oysters
- Production Increasing 5-10% annually
- Oysters >2X in 5 Years



East Coast Shellfish Industry

Year	2009	2015	% Change
Oyster #M	56	166.8	198%
Oyster \$M	\$26.7	\$70.7	165%
Cents	0.391	0.424	8%
Clam #M	576	560	-3%
Clam \$M	\$74	\$83	12%
Cents	0.129	0.148	15%
Farms	985	1432	45%
Hatcheries	55	34	-38%
FG \$M	\$100	\$157	57%



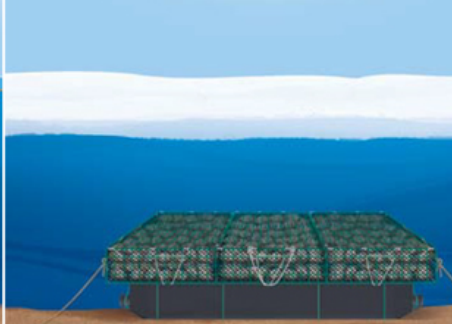
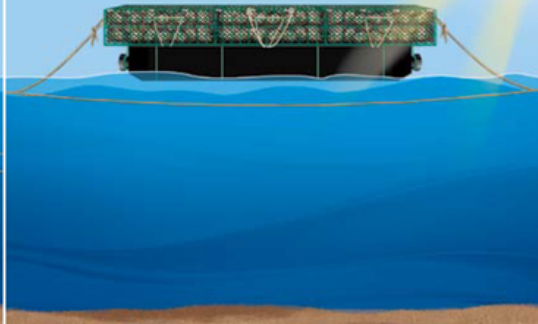
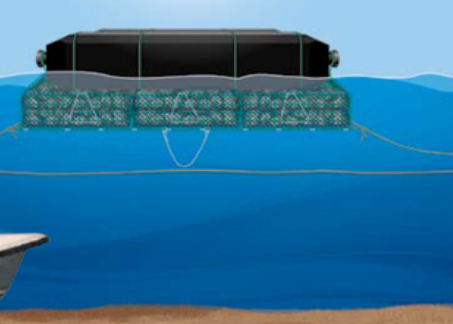
Growout Gear Options



Positioned for profitable growth.

Prescribed exposure to sun (UV) and air controls secondary spat, competitors, predators and contaminants.

Wintering is a matter of cap removal compared to arduous equipment retrieval.



Virginia (2014)

\$55.9M Farm Gate Value for VA Shellfish Aquaculture in 2014—An All-Time High

Fig. 3 Prices Reported for Sale of Individual Oysters

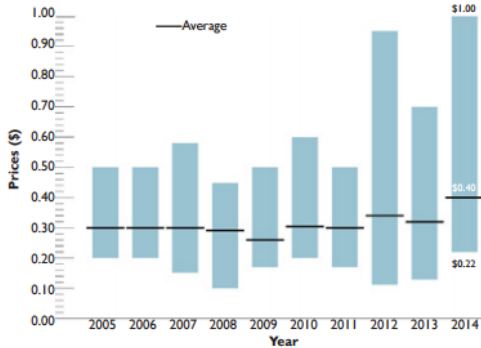
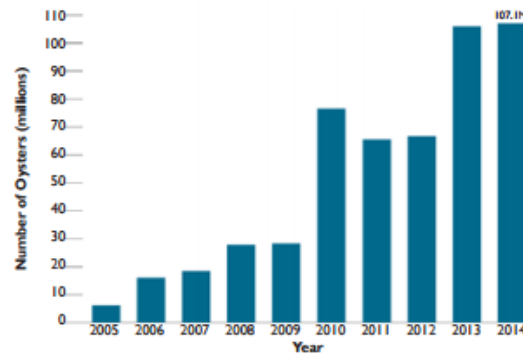


Fig. 1 Number of Single Oysters Planted (millions)



At a Glance

- \$55.9M Farm gate value in 2014
- \$17.1M oysters
- \$38.8M clams
- 100s Directly employed
- 243M All-time high in clam sales
- 86% Oysters sold out of state
- 1st U.S. clam production
- Leader in East Coast oyster production

Fig. 7 Number of Hard Clams Sold (millions)

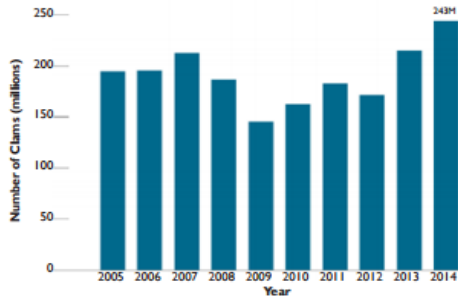


Fig. 2 Number of Aquacultured Market Oysters Sold (millions)

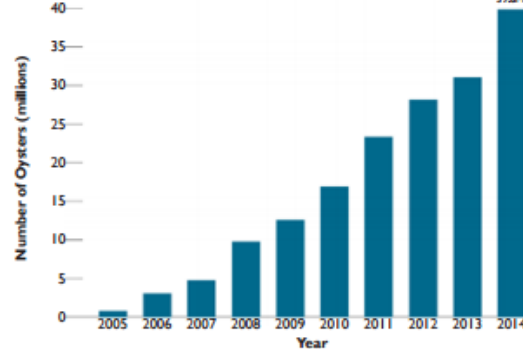


Fig. 4 Total Hatchery Production (billions)

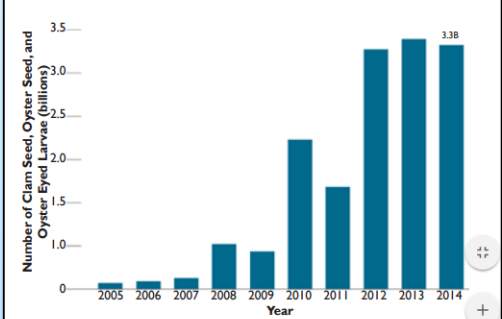
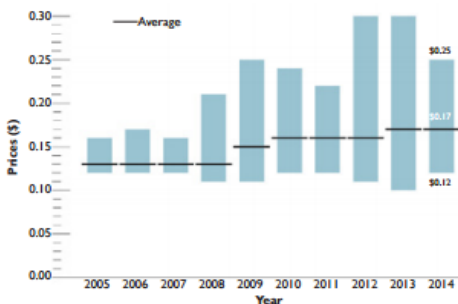


Fig. 8 Prices Reported for Sales of Individual Clams



Virginia Shellfish Aquaculture Situation and Outlook Report

Rhode Island Aquaculture Industry – 2015

- The number of farms in Rhode Island increased from 55 to 61
- The total area now under cultivation is 241.38 acres
- Oysters remained the number one aquaculture product with 8,272,172 sold for consumption, an increase of 725,040 oysters from last year
- The farm gate value of aquaculture products for consumption was \$5,433,948
- Oyster seed sales from RI aquaculturists was valued at \$162,500
- Combined value of aquaculture products for consumption and seed sales was \$5.59 million
- The number of aquaculture farm workers increased 20 percent from 142 to 171

Rhode Island Aquaculture Industry – 2015

How much aquaculture was there in RI through 2014?

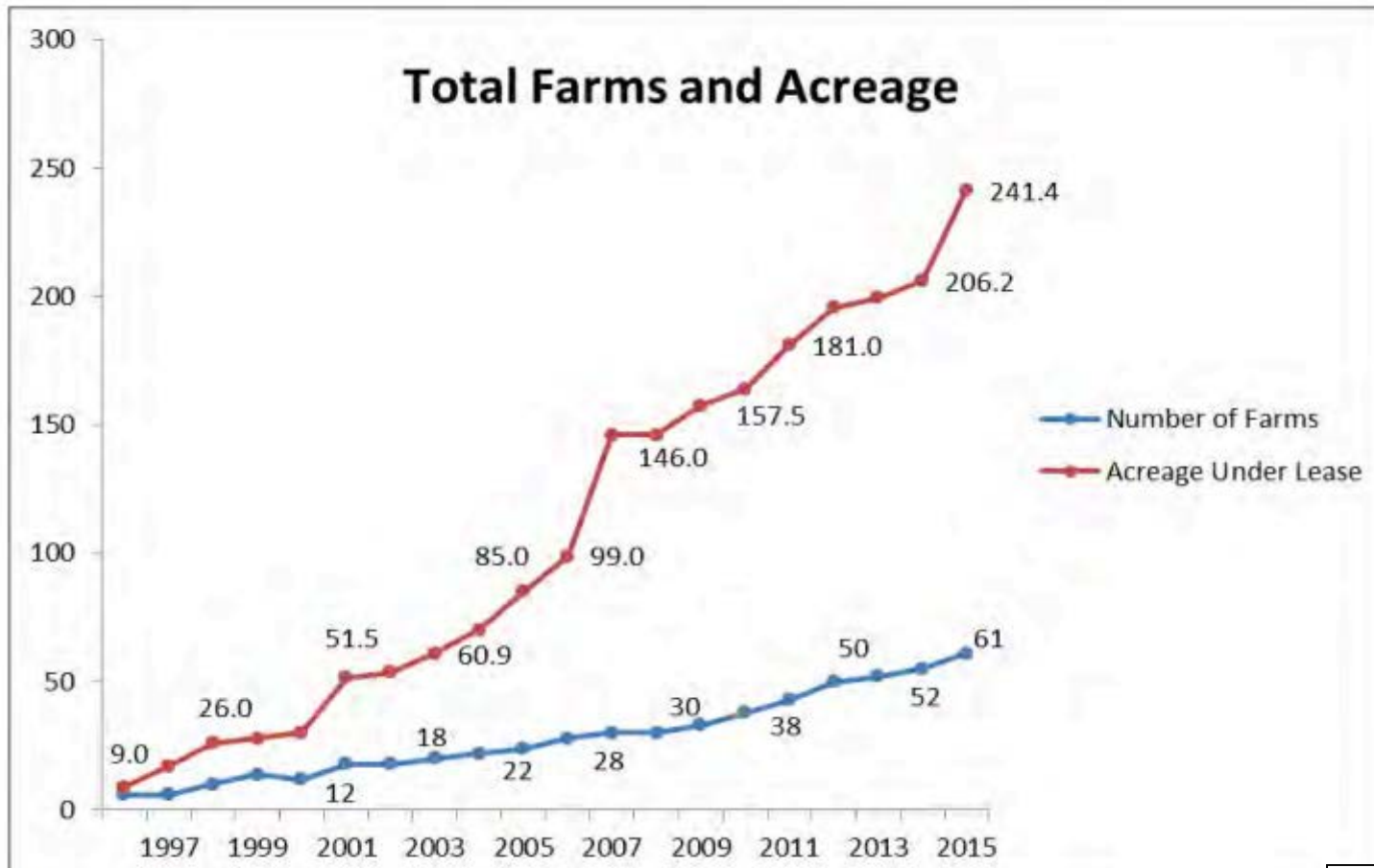


Figure 4.

Acreage for the 61 farms is 241.38

RI CRMC

Rhode Island Aquaculture Industry – 2015

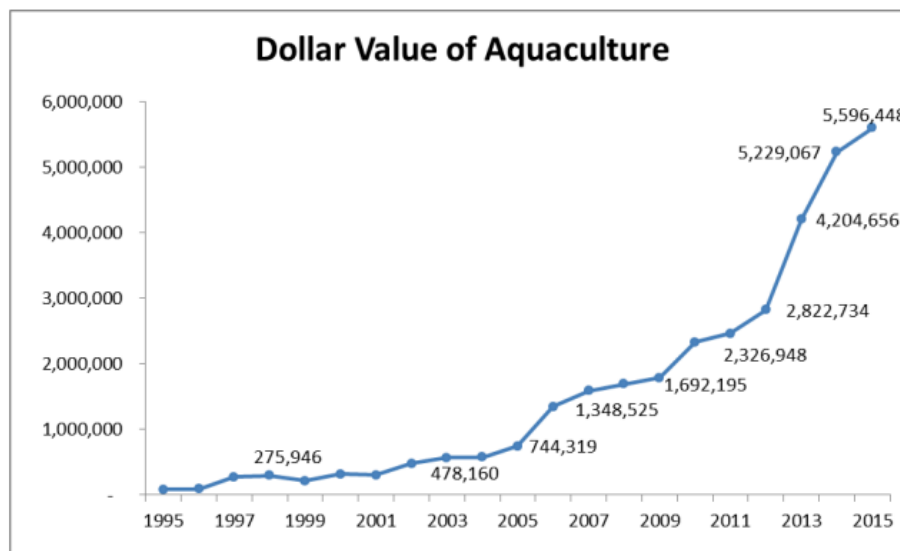
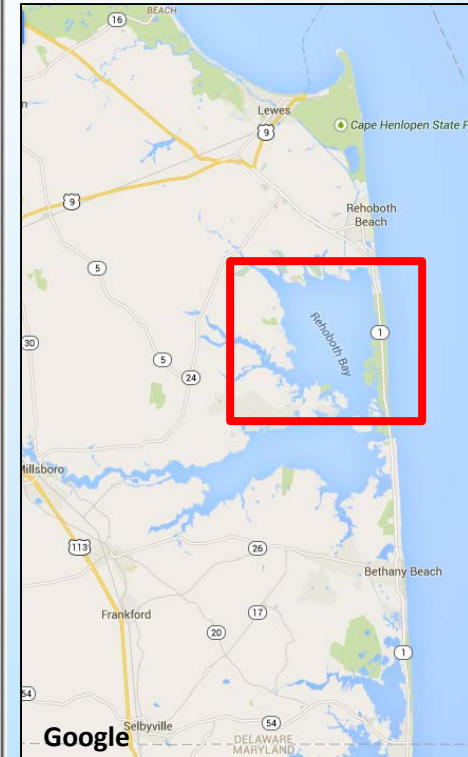
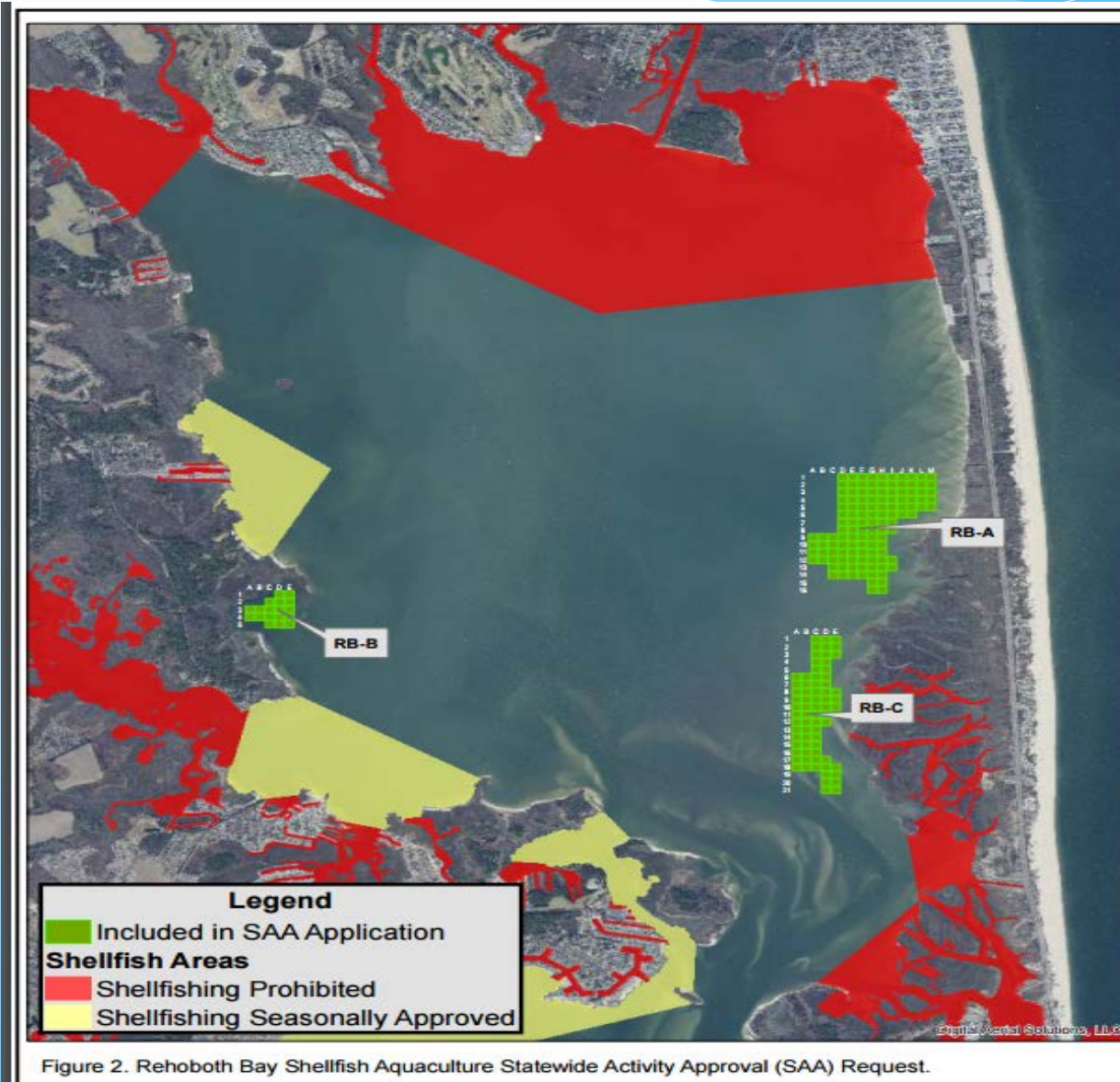


Figure 1.
Total value of aquaculture.

Year	Full time Year	Full time Seasonal	Part time Year	Part time Seasonal	Total
2006	17	8	17	15	57
2007	14	2	28	17	61
2008	12	1	25	24	62
2009	14	3	25	20	62
2010	17	4	30	28	79
2011	23	3	26	32	84
2012	32	9	32	32	105
2013	35	13	37	42	127
2014	47	17	35	43	142
2015	47	26	39	59	171

Figure 2.
Aquaculture farm related employment numbers show a 20 percent increase for 2015.

Shellfish Industry Development in Delaware



209 Acres



Shellfish Aquaculture Industry Issues/Outlook

- Expanding Domestic Markets
- New Species: Mussels, Scallops, Surf Clams
- NIMBY/Social Carrying Capacity
- *Vibrio parahaemolyticus* and *Vibrio vulnificus*
- Harmful Algal Blooms (HABs)
- Other Environmental
 - Water Quality, Temperature, Ocean Acidification
 - Threatened Species; Red Knot (Delaware Bay)
- Trade Issues: Imports and Exports

East Coast Shellfish Industry

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Inland Bays Shellfish Aquaculture

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
Phone: 302-645-4060; Fax: 302-645-4213

Workshop: Consumer Preferences for Delaware Oysters: An Economic Evaluation of Marketing Messages

[Workshop Agenda](#)

<https://events.r2o.constantcontact.com/register/eventReg?oidtk=ao7edpogp6z06id5e1d&nseq=6c&sch=>

Thursday February 9, 2017 from 9:30 AM to 2:00 PM EST; 104 Cannon Laboratory, Lewes, Delaware; Registration: Free, Lunch Included

[Rutgers University Aquaculture Innovation Center's new policy and practice for oyster seed production and sales beginning with the 2017 hatchery production season](#)

[State's shellfish aquaculture program takes major step forward with new approval process for limited areas of cultivation](#) (DNREC News Release)

[Secretary's Order No. 2016-W-0049](#)

RE: The Department of Natural Resources and Environmental Control, Division of Fish & Wildlife's Application To Approve Designated Shellfish Aquaculture As A Statewide Activity Pursuant To Section 2.5 Of 7 DE Admin. Code 7204. December 21, 2016

14-week Shellfish Training Program

Beginning Tuesday, Jan. 10 Roger Williams University Bristol campus, Center for Economic and Environmental Development

[Available as an Online Webinar](#)

[Delaware moving forward with first aquaculture program](#) Leasing expected to begin after spring 2017. By Maddy Launa. Cape Gazette. January 11, 2017

[Delaware shellfish farmers frustrated by permit, lease delays.](#) By Molly Murray. The News Journal. January 4, 2017.

[DNREC approves faster process for aquaculture leases.](#) By Laura Walter, Staff Reporter. Coastal Point. December 30, 2016

[Del. Aquaculture Order's Uncertainty Sparks Concerns.](#) By Bethany Hooper. The Dispatch. December 28, 2016

[State adopts Inland Bays shellfish aquaculture regulatory process.](#) By Mark Fowser. Delaware 105.9 FM December 23, 2016

[Delaware * Maryland * Virginia * New Jersey * Rhode Island](#)

[Other Links:](#) [Calendar](#) * [Organizations and Agencies](#) * [Equipment, Supplies and Services](#) * [Publications](#) * [Websites and Other Media](#) *

Delaware

[DNREC Division of Fish & Wildlife](#)

[DNREC Shellfisheries Management Plan for Indian River, Indian River Bay and Rehoboth Bay.](#) (4979). Final Draft. March 15, 1979. 90p.

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 WIT: 7

DE ADMIN. CODE §3801 SHELLFISH AQUACULTURE. May 21, 2014 Watershed Stewardship Building, 901 Pilottown Road, Lewes, DE 19958

[Legal Notice-Shellfish Aquaculture](#); [Proposed Regulation](#); [Proposed Shellfish Aquaculture Development Areas](#)
Presentation: [Background and Regulatory Development](#); Presentation: [Summary of Proposed Regulations](#)

darc.cms.udel.edu/ibsa

