6TH ANNUAL
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Management of Shellfish Aquaculture and Propagation in Massachusetts Waters

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Shellfish In Massachusetts

Massachusetts is home to some of the most valuable shellfish resources in the U.S.

- Near Shore Wild Commercial Shellfisheries- ~$25M dockside value
- Shellfish Aquaculture- $28M dockside value
- Recreational Shellfishing- Thousands of permits sold annually
- Cultural, Historical, and Ecosystem Value- Priceless

Shellfish management in Massachusetts is a partnership

-Boards of Selectman and City Councils, Shellfish Constables

Resource Management, Aquaculture Licensing, Patrol

-DMF, Environmental Law Enforcement, Department of Public Health

Classification, Resource Management, Aquaculture Management, Patrol, Contaminated Resources, Harvest and Handling, Dealer Permitting

*2017 SAFIS Dealer Reports ** Quahogs, Soft Shell Clams, Mussels, Oysters, Razor Clams, Bay Scallops

Shellfish Planting Guidelines

Shellfish planting in Massachusetts is conducted to enhance natural shellfish resources to maintain commercial and recreational fisheries, restore historic populations, mitigate for adversely impacted resources, commercially produce shellfish by private aquaculture, or for ecological services

Two Statutory Mechanisms and Categories for Shellfish Planting

Private Shellfish Aquaculture- means the planting and raising of shellfish at municipally licensed location(s) resulting in the commercial production of shellfish (MGL 130 sec 57).

Shellfish Propagation- means any planting activity conducted by municipalities or the state to increase the supply of shellfish available to the public fisheries. (MGL 130 sec 54) Includes recreational and commercial fisheries enhancement, mitigation, and restoration.

Private Shellfish Aquaculture (MGL 130 sec 57)

- Must occur under a license issued by the Municipality and certified by DMF
- Growout can only occur in approved or conditionally approved waters
- Licenses terms can be up to 10 years
  - Robust local and state review, public hearing
  - Limitations on site productivity and proximity to resources
- **Shellfish can be sold in commerce or as seed to other growers**

Shellfish Propagation (MGL 130 sec 54)

- Must be conducted by, or in partnership with, municipalities on municipal propagation sites.
- Can occur in closed waters subject to permit restrictions or relay permit
- BOS can close propagation sites to harvest for up to three years
  - Limited review due to limited closure length
  - Municipalities can manage harvest levels thereafter, can petition Director for extension for resource management purposes
- **Shellfish must end up as a public resource in approved or conditionally approved waters**

Private Shellfish Aquaculture

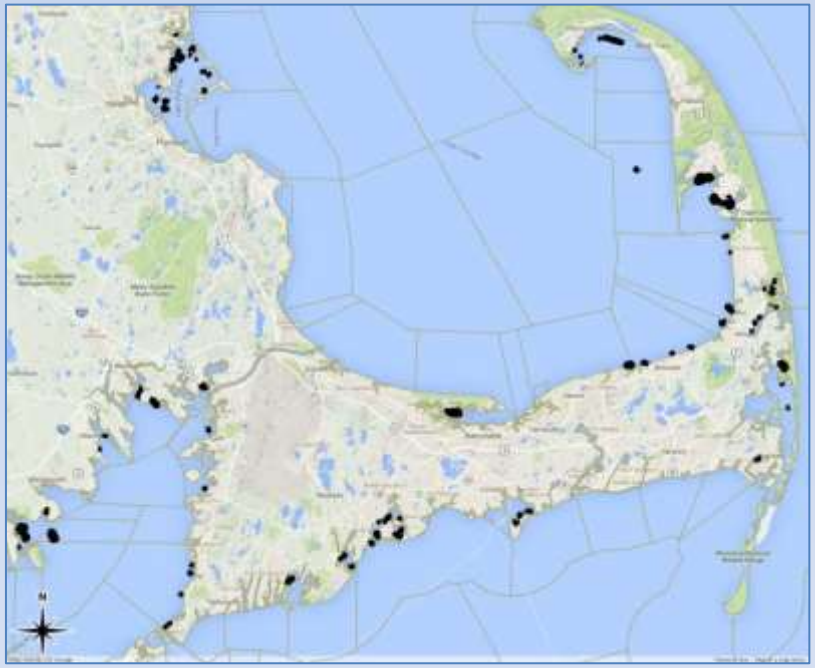


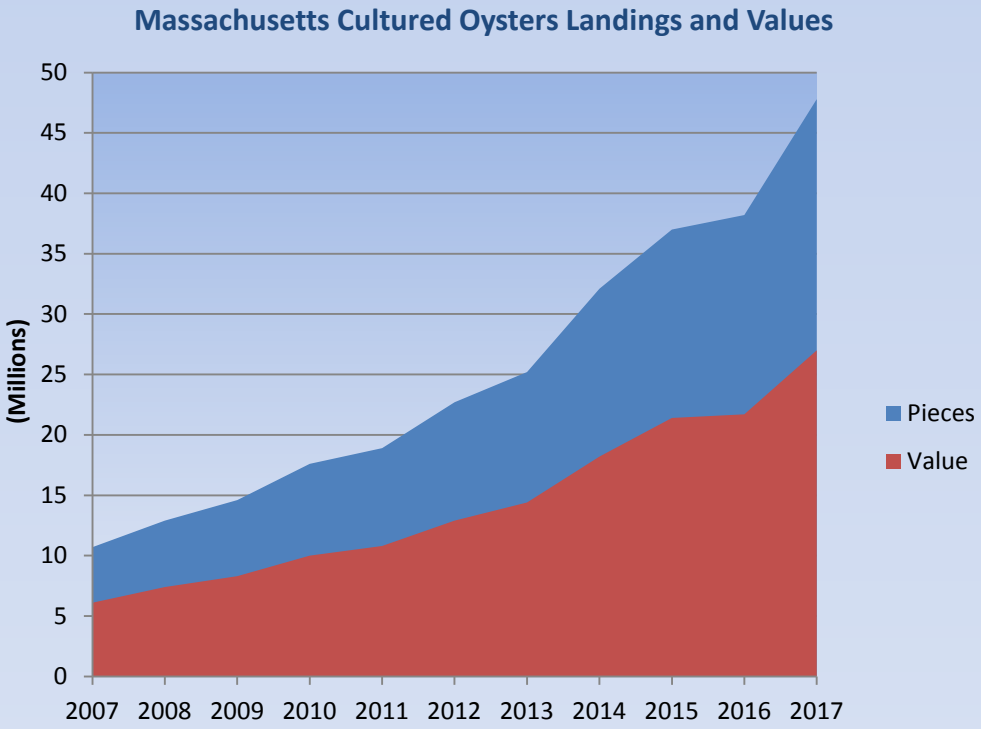
Table 13. 2017 private shellfish propagation permits and acreage under cultivation, by municipality.

Municipality	# Growers	Total Acres	Species Grown
Aquinnah	1	1.6	Quahog
Barnstable	52	156	Oyster, Quahog, Soft Shell Clam, Surf Clam
Bourne	7	9	Oyster, Quahog, Soft Shell Clam
Brewster	11	10.5	Oyster, Quahog
Chatham	2	7	Oyster, Quahog, Soft Shell Clam, Razor Clam
Chilmark	8	23	Oyster, Blue Mussel, Sugar Kelp
Dartmouth	1	0.5	Oyster
Dennis	28	32	Oyster
Duxbury	27	77.5	Oyster, Quahog, Surf Clam
Eastham	26	27.6	Oyster, Quahog
Edgartown	13	17	Oyster
Fairhaven	2	38	Oyster, Quahog
Falmouth	10	45	Oyster, Quahog
Gosnold	1	32	Oyster
Ipswich	2	2	Soft Shell Clam
Kingston	3	8.5	Oyster
Marion	4	2.5	Oyster
Mashpee	4	18	Oyster, Quahog
Mattapoisett	2	113	Oyster, Bay Scallop
Nantucket	8	73	Oyster, Quahog
Oak Bluffs	2	2	Oyster, Sugar Kelp
Orleans	14	17.5	Oyster, Quahog, Blue Mussel, Surf Clam
Plymouth	31	81.5	Oyster, Quahog, Surf Clam, Bay Scallop
Provincetown	12	30	Oyster, Quahog, Soft Shell Clam, Razor Clam
Rowley	3	4	Oyster, Soft Shell Clam, Razor Clam
Truro	7	20	Oyster
Wareham	7	83	Oyster, Quahog
Wellfleet	93	261	Oyster, Quahog, Soft Shell, Surf Clam, Razor Clam, Blood Arc
Westport	5	80	Oyster, Quahog
Yarmouth	4	27	Oyster, Quahog
Total	**390**	**1,299.7**	

Private Shellfish Aquaculture

Private Shellfish Aquaculture

Private Shellfish Aquaculture- Oysters



Data from SAFIS harvester reported and dealer reported data (some data has been converted from pounds to counts for reporting purposes).

Table 14. 2017 aquaculture landings and value.

American Oyster		
Town or Region	Pieces	Reported Value
Barnstable	10,660,314	$6,070,790
Brewster	445,177	$258,472
Chilmark/Oak Bluffs/Gosnold	302,760	$251,309
Dennis	2,599,293	$1,510,097
Duxbury	12,339,545	$6,804,473
Eastham	387,054	$218,547
Edgartown	2,299,579	$1,450,800
Falmouth	313,937	$189,035
Kingston	260,915	$145,472
Marion	94,414	$46,851
Mashpee/Yarmouth/Chatham	1,138,450	$665,002
Nantucket	391,037	$240,401
Orleans	1,208,761	$695,890
Plymouth	2,366,015	$1,292,389
Provincetown/Truro	323,789	$192,758
South Coast	1,786,475	$1,002,404
Wareham	1,555,606	$904,963
Wellfleet	9,376,577	$5,075,455
Total	47,849,698	$27,015,107

Quahog		
Town or Region	Pieces	Reported Value
Barnstable	494,914	$122,271
Eastham/Orleans	327,787	$64,737
Other areas	18,272	$3,832
Wellfleet	3,588,212	$864,900
Total	4,429,184	$1,055,740

Total Aquaculture Value	**$28,070,846**

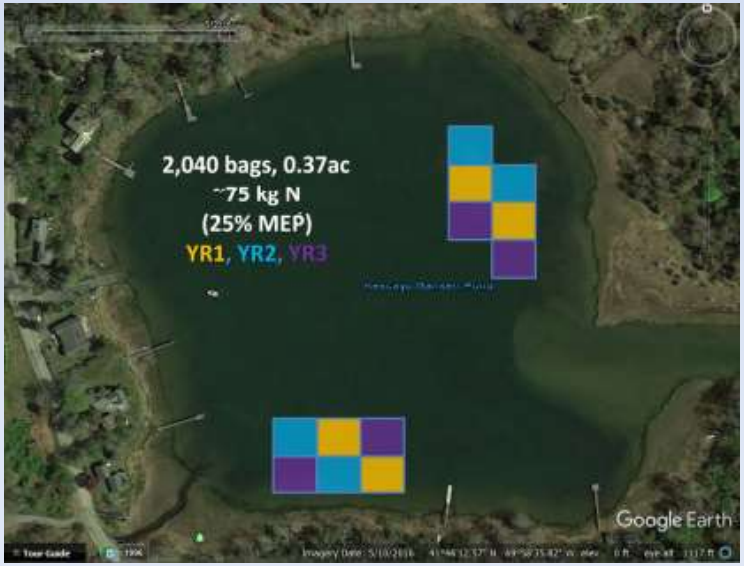
- 5 fold increase in aquaculture production between 2007 and 2017
- 95%+ of annual oyster production comes from aquaculture
- 85% of oyster production comes from 8 communities
- Growers purchased >250M oyster seed in 2017
- 3rd most valuable seafood product landed in the State

Municipal Shellfish Propagation

Cape Cod Chronical

Municipal Shellfish Propagation

Municipal Shellfish Propagation



All this shellfish planting must be good for the environment, right?

- **If sited and operated correctly** some aquaculture and propagation activities not only represent a sustainable economic use of our coastal resources, meaning they can be continued into the future providing economic opportunity without depleting non-renewable resources, they can also provide a net benefit to the environment.

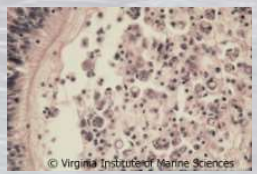
- Aquaculture and propagation **not operated or sited correctly** can, introduce disease, pests, and can harm the environment and other natural resources.

- Many of the same things that make Shellfish good for the environment also make them a high risk food and high risk resource.

Navigating the Requirements for Shellfish Planting Activities

Public Health- Requirements on patrol frequency, permissible activities in contaminated waters, the movement of shellfish between areas with different classifications, and pre and post harvest handling.

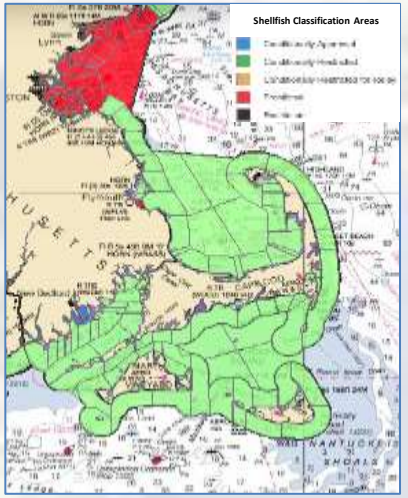
Environmental Health- Requirements on gear type, access and restrictions intended to minimize impacts on environment.



Veterinary Health- Requirements on the source of seed shellfish, the movement of shellfish between distinct waterbodies, age of cultch, and testing.

Exclusive Use- Requirements on the siting of aquaculture activities, the length of closures, scope of operations, and level of public input.

Do we focus on aquaculture, propagation or both?



Public Health

Do we have conditionally approved or approved waters?

- -Shellfish must be planted in open areas

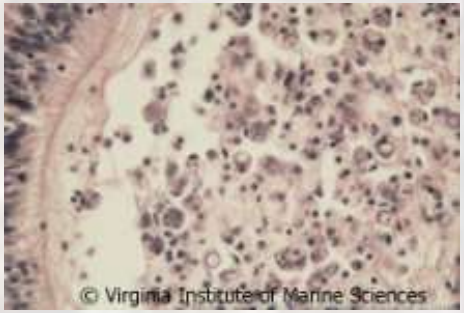
What is the classification of the target area?

- -Work in contaminated areas is limited
  - -Prohibited- Nursery growout <25mm
  - -Restricted- Municipal contaminated relays
  - -Cond. Approved- Seasonal operations or <25mm
- -What is our patrol capacity?
  - -Work in closed waters requires increased patrol and MOA
  - -Do you have a shellfish Constable

Veterinary Health-

Do we need to move the shellfish between areas?

- -What testing is required
  - -Plan B if they fail?



Do we focus on aquaculture, propagation or both?

Environmental Health-

What type of shellfish do we want to grow?

-Is it based on resource needs or nitrogen mitigation goals?

Is there appropriate habitat?

-Not all of Massachusetts oyster habitat

How much habitat?

-Are there differences in our resource needs and mitigation goals?

Do I have overwintering locations?

Exclusive Use-

Is the area already productive?

-Seasonal operations

-Restrictions on gear types

Has the area been closed for propagation or aquaculture in the past two years?

-Limitation in statute

Shellfish Planting Activities are reviewed under and subject to:

Licensing and Operational Permitting

- The Local Municipality: Board of Selectmen, City Council, Constable
  - MGL 130
- The Massachusetts Division of Marine Fisheries
  - MGL 130- 322 CMR

Permitting of Impacts and Gear

- DEP, Conservation Commission, Harbormaster
  - MGL 131, 91:10
- MEPA, NHESP, BUAR, CZM
  - Depending on size and location
- U.S. Army Corps of Engineers
  - (Section 10 of the Rivers and Harbors Act of 1899; and Section 404 of the Clean Water Act
- Other federal agencies

33 CFR 320.3 includes a list of related laws, including: Section 401 of the CWA, Section 402 of the CWA, Section 307(c) of the Coastal Zone Management Act of 1972, the National Historic Preservation Act of 1966, the Endangered Species Act, the Fish and Wildlife Act of 1956, the Marine Mammal Protection Act of 1972, the Magnuson-Stevens Act, and Section 7(a) of the Wild and Scenic Rivers Act.

Massachusetts Aquaculture Permitting Plan (MAPP)

- Under MAPP DMF intends to:
  - Develop guidance on permitting process for common aquaculture activities.
  - Conduct an impact and alternative assessment for common aquaculture and propagation activities.
  - Establish performance metrics that minimize environmental impacts and user group conflicts with these activities (BMPs).
    - Most permit holders already meeting many of the anticipated standards.
    - If proposed projects adopt these metrics, they would likely have predictable permit conditions.
    - Review agencies could easily identify that alternatives have been considered.
  - Possible to use a the MEPA SRP process to develop alternative MEPA permitting process for conforming projects
    - Request for process initiation already submitted by DMF.

Shellfish Management Takes Resources

Thank You


Commonwealth of Massachusetts
DIVISION of MARINE FISHERIES