Aquaculture and Municipal Propagation Management & Permitting in Massachusetts

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Aquaculture and Propagation Project
Massachusetts Division of Marine Fisheries
DMF Shellfish Program

Public Health Protection

• Interstate Shellfish Sanitation Conference (NSSP)
• Sanitary Classification of Shellfish Growing Waters (mandated by statute)
• Biotoxin Monitoring (PSP, ASP, DSP...)
• Program to Reduce Occurrence of *Vibrio parahaemolyticus*
• Evaluation of Human Health & Environmental Impacts of Oil/Chemical Spills
• Evaluation of Unusual Storm Events on Water Quality
  • (Boat Sinkings, Fires, WWTP Failures)
• Illness Outbreak Response
  • Norovirus
  • VP
• National Pollution Discharge Elimination Permit
DMF Shellfish Program

Direct Shellfish Management

- Shellfish Aquaculture
- Commercial Surf Clam, Ocean Quahog and State Waters Quahog Dredge Boat Fisheries
- Contaminated Shellfish
  - Depuration
  - Relaying
- Shellfish Size limits
- Maximum Harvest Limits
- Bay Scallop Season Extensions
Classification of Designated Shellfish Growing Areas
DMF Aquaculture Management Responsibilities

- **Municipal License Certification**
  - Site Inspection (eelgrass/shellfish survey)
  - License Process and Application Review

- **Resource and operational management**
  - Veterinary Health- Shellfish disease can be spread through transplants, nursery grow-out. Also brings risk of invasive species.
  - Exclusive Use- Balancing the displacement of wild fisheries, recreational opportunities, impacts to navigation.
  - Environmental Health- Impacts to SAV, increases in turbidity, access through sensitive habitat, risk of entanglement with protected species.
  - Public Health- Vibrio, Noro, harvest and handling. Industry operating in good faith could easily be undermined by improper management.
Private Shellfish Aquaculture

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

<table>
<thead>
<tr>
<th>Municipality</th>
<th># Growers</th>
<th>Total Acres</th>
<th>Species Grown</th>
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<tbody>
<tr>
<td>Aquinnah</td>
<td>1</td>
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<td>Quahog</td>
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<td>Barnstable</td>
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<td>Bourne</td>
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<td>Brewster</td>
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<td>Chilmark</td>
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<td>Dartmouth</td>
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<td>Dennis</td>
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<td>Mattapoiset</td>
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<td>Nantucket</td>
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<td>Wareham</td>
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<td>Wellfleet</td>
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<td>Westport</td>
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<td>80</td>
<td>Oyster, Quahog</td>
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<td>Yarmouth</td>
<td>4</td>
<td>27</td>
<td>Oyster, Quahog</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>390</strong></td>
<td><strong>1,299.7</strong></td>
<td></td>
</tr>
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</table>
- 5 fold+ increase in aquaculture production between 2007 and 2018
- 95%+ of annual oyster production comes from aquaculture
- 85% of oyster production comes from 8 communities
- Growers purchased >275M oyster seed in 2018
- 3rd most valuable seafood product landed in the State
Private Shellfish Aquaculture - Intertidal
Private Shellfish Aquaculture- Intertidal
Private Shellfish Aquaculture - Subtidal
Private Shellfish Aquaculture - Subtidal
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.
Shellfish Planting Activities are reviewed under and subject to:

- The Local Municipality: Board of Selectmen, City Council, Constable
  - MGL 130: 57-69
- The Massachusetts Division of Marine Fisheries
  - MGL 130-322 CMR
- 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.
M.G.L. Chapter 130 Sec 57 grants municipalities authority to issue private shellfish aquaculture licenses. Licenses:

• May be conditioned by the city council, selectmen or the Director at any time (sec 57)

• May not be for a period more than ten years and may be renewed for similar periods (sec 57, 58)

• May not impair the private rights of any person or materially obstruct navigable waters (sec 57)

• Shall permit public uses of the license area deemed compatible with the enterprise (sec 57)

• May be revoked by the municipality or the director for failure to comply with any terms, conditions or regulations set forth by these entities or for lack of substantial use of the licensed area (sec 57, 65)

• May be transferred to anyone who it would have originally been eligible for the license (sec 58)

• May not cost the applicant more than $25/ acre per year (sec 64)

• May not have any substantial adverse impacts to natural resources (sec 57)
*The license grants the holder:

- The exclusive use of the lands and waters for the purposes of growing shellfish (sec 57)
- The ability to plant and grow shellfish, bottom/off bottom culture (sec 57)
- The use of protective devices affixed directly to the bottom (sec 57)
- The ability to plant cultch for the purpose of catching shellfish seed (sec 57)
- The ability to recover treble damages of any person who without the license holder's consent... digs, takes, or disturbs shellfish gear or markers (sec 57, 63, 66, 67)

*Subject to Local, State and Federal requirements
The license holder is responsible for:

- Adhering to all conditions set on the license
- Properly marking the boundaries of the license site (2” lettering)
- Annually submitting a report of shellfish, planted, produced, and marketed.
- Updating the Municipality if the scope of operations outlined in the original application change (the municipality must notify the Division)
- Obtaining permits related to the possession and planting of seed
- Obtaining permits related to the commercial sale of shellfish
- Obtaining permits from other state and federal agencies as required
DMF Receives request for certification from Municipality that includes:
- Detailed site plan including latitude and longitude of corners;
- Geophysical site characteristics;
- Benthic habitat conditions;
- Proposed species, quantities, and densities;
- Proposed gear;
- Transcript of local public hearing;
- Proof of posting.

Municipal Shellfish Aquaculture License application receives approval or conditional approval from municipality.

DMF Receives request for certification from Municipality that includes:
- Detailed site plan including latitude and longitude of corners;
- Geophysical site characteristics;
- Benthic habitat conditions;
- Proposed species, quantities, and densities;
- Proposed gear;
- Transcript of local public hearing;
- Proof of posting.

DMF-AP reviews application materials.

DMF-AP conducts Site Inspection.

Results of site inspection and applications reviewed by DMF technical staff for consistency with 322 CMR 15 and DMF aquaculture guidelines (see xxx).

DMF-AP staff confirms consistency and all issues and concerns have been addressed.

Director issues certification and copies other agencies and applicant.

DMF Staff cannot support Certification (i.e. eelgrass or shellfish resources on site).

Issue resolved via reduction of footprint or gear modification.

Issues cannot be resolved.

DMF denial reviewed via MGL 30A sec 14.

Project exceeds MEPA Thresholds?
- i.e. >.5 acres of wetlands impacts, work in ACEC; >10 acres wetlands impacts.

Secretary denies certificate.

Secretary issues certificate.

Applicant submits ENF/EIR as appropriate.

DMF Coordinates with MEPA/other agencies/applicant to schedule pre-filing meeting.

Application for Shellfish Aquaculture License submitted to municipality.

Secretary denies certificate.

Director denies certification and copies other agencies and applicant.

DMF Staff cannot support Certification (i.e. eelgrass or shellfish resources on site).

Issue resolved via reduction of footprint or gear modification.

Issues cannot be resolved.

DMF denial reviewed via MGL 30A sec 14.
BEGINNING THE MUNICIPAL PRIVATE AQUACULTURE LICENSE PROCESS

• Applicant should review local bylaws and regulations pertaining to aquaculture to determine their eligibility

• Applicant should meet with local Shellfish Constable and discuss license site selection before submitting an application and request for hearing.
  • A preliminary conversation between Constable and DMF Aquaculture and Classification Staff may be helpful at this stage.

• Applicant submits application to Board of Selectmen and requests a public hearing for preliminary approval of license

• Application should include:
  • Detailed site plan and map including latitude and longitude of corners
  • Geophysical site characteristics (intertidal/sub-tidal)
  • Proposed species, quantities, and densities to be cultured
  • Schematics of proposed physical structures (cages, floats, moorings)

• Hearing Notice Must:
  • Be published in a newspaper at least 10 days before the hearing
  • Include the name and residence of the applicant the location, area and description of the proposed site.
CONTINUING THE MUNICIPAL PRIVATE AQUACULTURE LICENSE PROCEDURE

If application is granted preliminary approval following a hearing the municipality sends a request to DMF for certification of the license. The request must include:

- Proof of posting of the hearing notice
- Approved minutes from the hearing
- The project application, including:
  - Detailed site plan including latitude and longitude of corners
  - Geophysical site characteristics (intertidal/sub-tidal)
  - Proposed species, quantities, and densities to be cultured
  - Proposed gear and physical structures (cages, floats, moorings)

- If proper information has been received, DMF sets up site survey with Constable
  - Prior to the survey the site boundaries must be marked
CONTINUING THE MUNICIPAL PRIVATE AQUACULTURE LICENSE PROCEDURE

DMF Certification (MGL 130:57) DMF is required to certify issuance of the license will have no substantial adverse effect on the shellfish or other natural resources

Site Inspection

• Are there substantial numbers of shellfish on the site?
  • Maximum density guidance (1 quahog/ft², 3 soft shelled clams, /ft², 3 oysters/ft².) Other shellfish species are considered on a case by case basis
  • Seasonal sites may not be subject to maximum density req.

• Other Considerations
  • SAV >25’ buffer
  • Marine Mammals Entanglement- Sink or remove
  • Navigation
  • Water Quality
  • Birds

Site plan review

• Species to be planted and densities
• Gear type intended to be used (cages, racks, tents, bottom plant and dredging)
• Public and Veterinary Health (transplant, overwintering)
• Initial calculation of impacts for MEPA purposes
DMF certification of private aquaculture licenses is considered a “State Action” under MEPA regulations.

MEPA review may be required if the project exceeds certain review thresholds such as:

- Work in an ACEC or >.5 acres of wetlands alterations requires submission of an environmental notification form (ENF)
- >10 acres of wetlands alterations requires an ENF and EIR
- Segmentation of multiple individual projects where cumulatively impacts exceed MEPA thresholds

This is particularly important for spatial planning efforts and comprehensive management plans that involve aquaculture and propagation (i.e. aquaculture in 208 plans, municipal aquaculture development areas).
If it is determined the issuance of the license as proposed will/may have substantial adverse effects...., DMF sends letter to municipality denying certification, requesting additional information or requiring the town to condition the license or adjust project area/scope to mitigate adverse effects (TOY restrictions, gear modifications).

If it is determined the issuance of the license and operation there under will have no substantial adverse effects.....

- DMF sends certification letter to Municipality
- Applicant can now seek Permits
- License must be issued within 2 years of survey

Once license is issued a copy must be sent to DMF
Shellfish Planting Activities are reviewed under and subject to:

- The Local Municipality: Board of Selectmen, City Council, Constable
  - MGL 130:54, 57
- The Massachusetts Division of Marine Fisheries
  - MGL 130 & 322 CMR
- 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 state and federal agencies and tribes

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.
Permitting of Gear and Impacts Associated with Aquaculture and Propagation

Wetlands and MESA

• Applicant meets with Cons Com agent
  – If private aquaculture, provides license application and DMF certification letter
  – Calculates impacts to wetland resource under the Cons Coms jurisdiction
  – Determines if project is in Mapped NHESP habitat.
  – If in Mapped habitat submits streamlines NOI or MESA Checklist. If not in Mapped NHESP habitat submits standard NOI or RDA.

Waterways

• If floating gear, applicant meets with harbormaster to obtain 10A approval
• If pile driven structures or clutching, applicant files for Cht 91
  – May trigger MEPA review depending on size
• Other “gear” does not require individual waterways approval
Army Corps of Engineers General Permit

Aquaculture covered under MA General Permit Category 22

Applicant determines eligibility to file for SVN, PCN, or IP

If Self-Verification Notification eligible send copy of SVN to DMF
   - Floating bags/cages and upwellers in waters <10” MLLW

If Pre-Construction Notification eligible, submits DMF letter and ACOE application to ACOE

Individual Permits are required for larger or novel projects (ADAs, large sites, non-indigenous species, etc.)

GPs updated ~ every 5 years

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**GP 22. Aquaculture (Authorities: §§10 and 404)**

(a) The installation of buoys, floats, racks, trays, nets, lines, tubes, containers, and other structures into navigable waters of the U.S.; (b) Discharges of dredged or fill material into waters of the U.S. necessary for shellfish seeding, rearing, cultivating, transplanting, and harvesting activities; and (c) Shellfish seeding or brushing the flats projects. The area and any elevated structures within it must be marked in conformance with 33 CFR 64, and the permittee must contact the USCG, First District, Aids to Navigation Branch (617) 223-8347 to coordinate the proper buoy markings for the activity. Buoys shall be deployed and maintained as appropriate. Any fill material imported to the project from offsite (this is limited to mineral growth medium used in culture trays) shall be clean and of comparable grain size to the native substrate.

Not authorized under GP 22 (IP required): (a) New, or expansions of, impoundments and semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster with an impounded area ≥½ acre; (b) Cultivation of a nonindigenous species (see Note 1) unless that species has been previously cultivated in the waterbody; (c) Cultivation of an aquatic nuisance species (see Note 1); (d) Attendant features such as docks, piers, boat ramps, stockpiles, or staging areas; or the deposition of shell material back into waters of the U.S. as waste; (e) Private sites >10 acres or municipal areas >25 acres; (f) Racks and other floating equipment that cover >10% of the project area or 20,000 SF, whichever is greater. An area is considered covered with floating equipment if normal navigation through the area is precluded; or (g) Activities, including any vehicular access, that negatively impact coastal or freshwater wetlands, or more than minimal negative impacts on: (1) Avian resources such as, but not limited to, shore birds, wading birds, or members of the waterfowl group. This is meant to include migratory bird nesting, feeding or resting activities (see 50 CFR 10.13); or (2) Existing or naturally occurring beds or population of shellfish, marine worms or other invertebrates that could be used by humans, other mammals, birds, reptiles, or predatory fish.

Self-Verification Eligible¹: Devices and activities that do not require a PCN or an IP.

PCN Required¹

1. Permanent & temporary impacts in tidal or non-tidal waters of the U.S. including cultch or spattered shell; or
2. Structures such as cages, trays, racks, bags, rafts or other floating equipment. However, structures are SV eligible provided a PCN is not required elsewhere in this document and they are: (a) located within the footprint of an existing authorized fixed or floating structure in which case in-water lines, ropes or chains may be used; (b) comprised of floating upweller docks totaling ≤40 SF in area; (c) structures (e.g., cages, racks) elevated ≥2 feet above the ocean floor with legs within a lease site with ≤4 buoys marking the corners on no other lines; or (d) floating cage strings with a single connecting line, ≤2 anchors and ≤2 end marker buoys per string within a lease site with ≤4 buoys marking the corners; and
3. Research, educational, commercial-viability or experimental aquaculture gear activities for indigenous species; or
4. Activities include a species not previously cultivated in the waterbody; or
5. Kelp or finish aquaculture; or
6. Land-based hatchery intakes >3 inches in diameter; or
7. Activities in water depths >10 feet mean lower water (MLLW); or
8. Activities with in-water lines, ropes or chains (see exceptions in 2(a), (c) and (d) above); or
9. Activities occur in SAS or involve mechanical or hydraulic dredging;
10. Activities occur in the Connecticut River from the Turners Falls Dam to the MA/CT border or the Merrimack River from the Essex Dam to the mouth. This is to protect endangered species; or
11. New, or expansions of, impoundments and semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster with an impounded area ≤½ acre; or
12. Aquaculture facilities ≤25 acres applied for by municipalities; or
13. Activities that do not require an IP. Activities that do not require a PCN or an IP may be SV eligible.
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 Planting Activities are reviewed under and subject to:

- The Local Municipality: Board of Selectmen, City Council, Constable
  - MGL 130:54, 57

- The Massachusetts Division of Marine Fisheries
  - MGL 130 & 322 CMR

- 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 state and federal agencies and tribes

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Operational Permitting
Class 3 Type 1 Propagation Permit
Issued to private growers and municipalities

Authorizes the possession of naturally occurring seed shellfish, seed shellfish transplanted under previously issued permits and to transplant seed and/or adult shellfish from Division of Marine Fisheries approved sources at and to the permit holders private shellfish aquaculture site, licensed under authority of Chapter 130, Section 57 of the Massachusetts General Laws; or at other locations authorized by endorsements made part of this permit. You must carry this permit while engaged in the activities this permit authorizes.

DMF Propagation permit

- Name and Sites
- Growout and Seed Purchases
- Intermediate Grow-out
- Off-site culling
- Seed Sales
- Off-Site Overwintering
- Spat Collection
- Special Conditions
SHELLFISH AQUACULTURE PERMIT CONDITIONS

General Conditions

1. All activities conducted under authority of this permit shall be completed in accordance with the provisions of 322 CMR: 3.03: Transplanting Seed and Adult Oysters; 6.20: Minimum Sizes; 15.00: Management of Marine Aquaculture; 16.00: Shellfish Harvest and Handling and all other Marine Fisheries regulations and statutes pertaining to shellfish and shellfisheries, unless exempted by this permit. **No seed or adult shellfish may be introduced, transplanted or planted into coastal waters unless listed on this permit.**

2. Any violations of the conditions of this permit may result in fines, suspensions, revocation or prosecution under pertinent sections of Chapter 130, MGL and 322 CMR (Code of Massachusetts Regulations).

3. All activities conducted under authority of this permit are subject to inspection at any reasonable time by Marine Fisheries employees, Office of Law Enforcement environmental police officers and local shellfish constables (Chapter 130, section 98, MGL).

4. An annual report must be filed with Marine Fisheries indicating the amount and source of shellfish obtained, grown and a list of all seed sales not later than February 28, 2019 (Chapter 130, section 65, MGL).

5. All shellfish obtained for transport and propagation must be of a species and from a source approved by Marine Fisheries and listed on this permit. No naturally occurring shellfish from public beds may be stored on an aquaculture license site.
6. The sale of shellfish for consumption must comply with the provisions of Chapter 130, sections 2, 80, 81, 82, and 83; 322 CMR, 7.00 and 16.00, and 105 CMR 500.000 (Department of Public Health) and provisions of this aquaculture permit.

7. This permit is valid until midnight December 31, 2019 for the possession of seed shellfish on the aquaculture site, and other locations authorized on this permit, unless sooner revoked for cause.

8. In the event of shellfish closures to protect public health under authority of Chapter 130, section 74A, MGL such as those resulting from unusual rainfall, red tide or oil spills, no activity other than emergency maintenance of gear and shellfish shall be conducted unless prior permission is obtained from the Division of Marine Fisheries or the local shellfish constable who must notify MarineFisheries.

9. All permit holders are required to maintain a list of individuals authorized to work on the permit holder’s licensed aquaculture site. Permit holders are required to update the list regularly and to provide a copy of the most recent list of authorized individuals to their local Shellfish Constable. Non-permitted individuals who are authorized to work on an aquaculture site are allowed to transport seed or market size shellfish for culling and/or over wintering if they are named on the list and possess a copy of this permit. Employees may sell shellfish to a wholesale dealer on behalf of the aquaculture license holder if they possess an Employee Transaction Card issued by MarineFisheries.
10. **Bulk Tagging for Culling and Over Wintering** if a permit is endorsed for *off-site culling* or *off-site overwintering*, the permit holder may bulk tag individual lots of shellfish during transport to and from the aquaculture license site and the off-site location.

A single green water proof tag may be used indicating the permit holders name, Shellfish Aquaculture Permit number, date of removal, and location of the licensed site (town and water body), number of containers in the lot with the following statement: *All shellfish containers in this lot have the same removal date and are from the same licensed site.*

Additionally, one of the following statements must be on the tag:

1. **Aquaculturally Reared**: To be culled or overwintered.
2. **Aquaculturally Reared**: Culled or over wintered, for return License Site.

The permit holder shall have a **bound log book** with the same information on the green tag recorded in ink and the book shall be kept with the shellfish in the cargo area and not in the driving compartment of the motor vehicle.

**BULK TAGGING OF SHELLFISH IN TRANSPORT FOR COMMERCIAL PURPOSES IS PROHIBITED.**

It is unlawful for any person to possess or transport shellfish (shellstock) for commercial purposes that is not tagged, as required in 322 CMR 16.03.
Endorsement Conditions

A. Grow-out

The permit holder is authorized to grow the shellfish as endorsed at A. from sources approved by MarineFisheries.

B. Intermediate Grow-out

This permit authorizes the intermediate grow out of seed in an upweller, downweller, flupsy or other device as endorsed in B. If these devices are in coastal waters they must be located on an licensed aquaculture site and authorized by this permit at B. Upwellers and downwellers may be located at a land based facility or if authorized by this permit at B.

1. Prior to transport and transplant of any seed from an intermediate grow out site to a licensed aquaculture site, or other location, permission must be obtained from MarineFisheries through an amendment to this permit. MarineFisheries may also require shellfish disease testing before such permission is granted.
Nursery/Intermediate growout allowed in contaminated waters subject to restrictions

- **Prohibited**
  - Private- Seed must be removed prior to reaching 25mm in SL
  - Propagation- Seed must be removed prior to reaching 25mm in SL

- **Restricted**
  - Private- Seed must be removed prior to reaching 25mm in SL
  - Municipal- Seed must be removed prior to reaching 25mm in SL or under contaminated relay permit

- **Cond. Approved- Closed Status**
  - Private- Seed must be removed prior to reaching 25mm in SL or at any size when area is in open status
  - Municipal- Seed can be removed prior to reaching 25mm in SL, under contaminated relay permit, at any size or at any size when area is in open status

- **Sites used by private aquaculturists must be licensed or land-based**
  - May require municipalities to take over increased patrol requirements via MOA.
C. Off-Site Culling

Permitted shellfish seed **and/or market sized shellfish** may be transported to an off-site location **away** from the permit holder’s private shellfish aquaculture site as endorsed at C. for the purpose of culling subject to the following conditions. **Permit holder culling Market sized oysters during the Vibrio parahaemolyticus (Vp) control period** must also adhere to **Vibrio Management regulations in 322 CMR 16.05: (4).**

1. The permit holder informs the local shellfish constable that their permit is endorsed for off-site culling.

2. All shellfish in transport to and from the off-site culling location shall adhere to the **Bulk Tagging** provisions at **General Conditions, no.10** of this permit or **each container may be individually tagged using the same record keeping requirements at the permit holder’s discretion.**

3. This permit endorsement does not authorize the possession or transport of seed shellfish of any kind other than provided for in this permit.

4. All shellstock off-site culled must be returned to the aquaculture license site prior to final harvest and sale to a **wholesale dealer.**
**D. Seed Sales** This permit authorizes the sale of seed shellfish as endorsed at B. subject to the following conditions:

1. Sale of seed shellfish shall be made only to persons holding a valid aquaculture or propagation permit from *Marine Fisheries* or to persons holding a similar permit from other states or provinces.

2. Prior to the sale or transplant of any species of seed or adult shellfish from a licensed aquaculture site, upweller or other location permission must be obtained from *Marine Fisheries* through an amendment to this permit. *Marine Fisheries* may also require shellfish disease testing before such permission is granted.

**Pathology DMF requirements (additional reportable diseases may apply)**

- **Quahogs** *(Mercenaria. mercenaria)*: Dermo, QPX, Hematopoietic Neoplasia
- **Oysters** *(Crassostera virginica)*: MSX, Dermo, SSO, and ROD
- **Bay Scallops** *(Argopectin irradians)* and **Surf Clams** *(Spisula Solidissima)*: Dermo
- **Soft shelled clams** *(Mya arenaria)*: Hematopoietic Neoplasia

**Approved Labs**

- Kennebec River Biosciences
- Roger Williams University Aquatic Diagnostic Laboratory
- Rutgers University Haskin Shellfish Research Laboratory
**E. Over Wintering** - This permit authorizes the over wintering of seed and/or market sized oysters at other than the aquaculture site as endorsed at E. subject to the following conditions:

1. Over wintering shellstock off a licensed culture site is only authorized for the purpose of re-planting on the permit holder’s aquaculture site(s) for additional growout.

2. Oysters, both seed and market size may be stored or overwintered out of water in pits, or cold storage units as endorsed at E.

3. In water, off-site over wintering of oysters shall only be conducted at another licensed site as authorized at E.

4. **No direct marketing of shellfish is allowed from any type of land based over wintering operation.** All market sized oysters over wintered out of water must be re-submerged (re-conditioned) for a **minimum of 14 days** prior to harvest for human consumption.

5. All shellfish in transport to and from the over wintering location shall adhere to the **Bulk Tagging provisions at General Conditions, no. 10** of this permit or each container may be individually tagged using the same record keeping requirements, at the permit holder’s discretion.
**F. Spat Collection**

The permit holder is authorized to conduct shellfish spat collection as endorsed at *F.* subject to the following conditions:

1. Off site spat collection if endorsed shall commence on June, 15 or later and cease on or before September, 15. No gear shall be placed in the water, prior to or remain in the water after the inclusive dates. This does not release the permit holder from obtaining local permission.

2. Off-site spat collection may only be conducted in the same body of water where the permit holder’s license site is located or as determined by *MarineFisheries* and endorsed at *F.*

3. On site spat collection shall be in accordance with the provisions of the *Aquaculture Guidelines of the Department of the Army, General Permit for the Commonwealth of Massachusetts.*
B. Did you obtain/purchase seed shellfish in 2017, Yes___ No______? If so, complete the table below. Use the species codes from the table above, and the site numbers from section A. to complete the last three columns. If shellfish were held at intermediate sites (upweller, field nursery, overwintering) prior to transplant to the final growout site, please list the site number(s) and dates of transplant. Include overwintered seed you purchased in 2016 but did not plant until 2017.

<table>
<thead>
<tr>
<th>Species</th>
<th>Size When Obtained</th>
<th>Amount Obtained</th>
<th>Hatchery/Individual/Town where Seed was Obtained from (include specific location if source has multiple sites)</th>
<th>1st Intermediate site # (if applicable)</th>
<th>2nd Intermediate site # (if applicable)</th>
<th>Site # where shellfish are now</th>
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</thead>
<tbody>
<tr>
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## 2017 Propagation Permit Holders

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<tr>
<th>Name</th>
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<tr>
<td>Chatham Shellfish Co (Richards, John R)</td>
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<td>Richard, Frederick S</td>
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<tr>
<td>Taylor, Hyman &amp; Judy</td>
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<tr>
<td>BB Fish Co (Sculford, Benjamin C)</td>
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<tr>
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<tr>
<td>Rose Shellfish (Ross, James)</td>
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<td>Ebb N Flow (Austin, Barbara E)</td>
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<td>Toby S Oyster Farm (Steerer, Tobin A)</td>
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<td>Pulcher, Frederick K</td>
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## 2016 Propagation Permit Holders

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ISSC Update - Aquaculture

- New Aquaculture Chapter- (ECSGA/PCSGA/MA/VA)
  - Seed in Prohibited waters
    - Establishes difference between “seed” and “sub-legal”
    - Reduces transplant time from 6 months to 4 months
      - Established as “maximum seed size” in MA (25mm for oysters)
  - Operational Plans/ Audits
    - Currently addressed through permit application
    - Expect to be more detailed in the future
    - Bridge between HACCP and Regulations
Upwellers and Nursery Growout in Closed Areas

• Potential for increased nursery space, Nitrogen mitigation efforts.
• DMF established policy to allow licensing of seasonal nursery sites in closed/contaminated areas (May/17)
• Requires municipalities to take over increased patrol requirements
• Requires Operational plan
• Current 25mm max SL (Change in MO may allow for a slight increase)
FDA PEER- Required the development of a sanitation and maintenance framework for ice machines at private residences (system already established for ice and wholesale sources).

Regulation update requires that harvesters that use ice sourced from private ice machines keep on file:

- Water testing for private wells at a minimum every 6 months
- Cleaning logs
- Schematics on file that show proper installation
- Records subject to inspection upon request
Bird and Mammal Congregations on Aquaculture Gear

• **Public Health Significance**: Bird and mammal waste potentially containing human pathogens can concentrate in shellfish tissues and result in human illness.

• **Relevance to Aquaculture**: **Direct**- Floating and suspended aquaculture gear can serve as roosting habitat for birds and/or pullouts for marine mammals. Their waste can be concentrated in shellfish tissues due to the proximity. **Indirect**- Waste associated with congregations of birds and mammals can impact water quality in the harvest area, possibly requiring re-classification. May increase levels of indicator bacteria above threshold levels of some countries/ buyers.

• **Strategies for Control**: Bird deterrents, gear modifications, purging prior to harvest, monitoring.

• **Current requirement(s):**
  – The 2017 NSSP MO requires States to evaluate when aquaculture structures attracts birds or mammals, their presence should be considered for possible adverse effects on growing area water quality and that each aquaculture site that the Authority determines may attract sufficient birds and/or mammals that their waste presents a human health risk shall have a written operational plan. The plan shall be approved by the Authority prior to its implementation
  – No NSSP upper limit on e-coli/fecal coliform in shellfish tissues (previously 230/100 g)
  – Some states, countries have upper limit on fecal coliform/e-coli in shellfish tissues.
  – Some buyers have upper limit or zero tolerance for fecal coliform in shellfish
Basic Harvest and Handling

• HARVEST: Individuals commercially harvesting shellfish must have a state commercial fishing permit or other DMF permit endorsed for commercial shellfish harvesting and the companion Shellfish Transaction Card.

• Shellfish for direct marketing may only be harvested from waters classified as Approved or Conditionally Approved by DMF and in the “open status”.
  - Harvesters should consult with local shellfish authorities or DMF to determine those areas that are open and safe for harvesting.
  - Information on shellfish growing area classifications can be found by searching “DSGA” on DMF’s website.
Basic Harvest and Handling

- HANDLING: Harvesters shall ensure shellfish are harvested, handled, and transported in a manner to prevent contamination and deterioration. All containers used to hold shellfish shall be clean, free of debris, and fabricated using safe, easily cleanable materials (smooth surface). Shellfish shall be covered or in a closed vehicle during transport to prevent exposure to direct sun light and contaminants.
Basic Harvest and Handling Checklist

- Boats used in harvesting must be kept clean.
  - Shellfish shall be stored on raised areas to prevent contact with bilge water and away from fuel, oil and other chemicals.
  - Shellfish shall be covered to prevent exposure to hot sun and birds. Each harvest boat must have a sanitation device or container with a tight fitting cover and be secured and placed to prevent contamination of shellstock by spillage or leakage.

- Each container must be indelibly labeled "Human Waste" in contrasting letters at least three (3) inches in height.
  - Containers should be emptied only into a sewage disposal system and cleaned. The overboard discharge of human waste is prohibited in Massachusetts.

- Dogs, cats and other animals are not allowed on harvest vessels.
Basic Harvest and Handling

- All containers of shellfish must be **individually** tagged.

  • The tag shall contain:
    - The full name of the harvester,
    - DMF Commercial Shellfish Permit ID number,
    - Date and **time** of harvest (time of exposure of first shellfish harvested),
    - The type and quantity of shellstock,
    - The initials MA, the shellfish area name and number, and if applicable the aquaculture site number.
    - The following statement shall be written in bold capitalized type “**THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY OR IS RETAGGED AND THEREAFTER KEPT ON FILE FOR 90 DAYS**” (322 CMR 16.03).
Basic Harvest and Handling

• TRANSPORT: All species of shellfish, regardless of the time of year, should be transported to a permitted wholesale dealer as soon as possible to be placed under refrigeration.

• Shellfish may also be sold to a wholesale dealer at the landing site.

• Shellfish bound for market may not be stored at any unpermitted facility prior to delivery to a permitted wholesale dealer.
Basic Harvest and Handling

• The NSSP and DPH have maximum timelines for delivery of shellfish to a permitted wholesale dealer by the harvester after harvest or exposure.

• Shellfish must be delivered to the dealer on the same day of harvest.
  – In May, June, July, August, September and October shellfish must be delivered to the dealer on the same day of harvest in less than 18 hours from time of harvest or exposure.
    • Only Surf Clams and Ocean Quahogs intended for thermal processing are exempt from these standards.
  – Additional requirements apply to oysters during the V.p. control season (322 CMR 16.05).
Harvest Day Completing a Transaction

Commercial Permit with shellfish endorsement
DMF Shellfish and Sea worms Permit
Shellfish endorsement on other commercial permit

Transaction Card and Slips

- Only you can use your transaction card
- Must be accompanied with photo ID
- Transactions must be completed by the harvester and an employee of the dealer (no unattended drop offs)
- Transactions may only occur at the point of landing or at the dealers physical facility
- You can not take market bound shellfish home first
Reporting your Landings

Commercial permit holders must report trip-level information for ALL marine species landed under the authority of their MA commercial permit.

Reports must be submitted monthly by the 15th of the following month.

For months without fishing you must indicate “Did Not Fish.”

Typical data elements submitted by dealers to SAFIS:
- Fisherman, vessel, and port of landing
- Landing date and purchase date
- Species, market, grade, unit (top neck, petite)
- Disposition (sold, bait, personal use)
- Quantity (count, lbs, bushels)
- Price
- Source (wild-caught, aquaculture, cars, research set aside)
- Harvest Area (shellfish only)
- Cultured harvest transactions should use the Aquaculture catch source.
Grower Harvest and Handling Training

**Proper Icing Technique for Harvesters**

Ice oysters within 2 hours of time of harvest or prior to leaving the point of landing, whichever occurs first.

**Applying Ice to Oysters**

Oysters must be fully submerged at or below 45°F to inhibit growth and proliferation of bacteria.

**Oyster Processing and Re-Submergence**

If more than 2 hours from time of exposure, oysters must be re-submerged for a minimum of 14 days prior to harvest.
Thank You