Sundman, Nancy

From: Southwood Christopher
Sent: Wednesday, September 30, 2020 10:13 AM
To: Sundman, Nancy
Cc: Schiavi, Anthony; Cannon, Glenn
Subject: Laspina Aquaculture License (Scallop Bay Marina)
Attachments: BOS Memo Laspina.doc; Scallop Bay Aquaculture.pdf

Hi Nancy,
Attached is the Laspina Aquaculture License request for the Selectmen packet.
Let me know if you need additional info.
Thanks,
Chris

RECEIVED

2020 SEP 24 AM 8: 39

TOWN CLERK BOURNE

Town of Bourne
24 Perry Ave.
Buzzards Bay, Massachusetts 02532
(508) 759 – 0600, ext. 1307

PUBLIC HEARING NOTICE

Notice is hereby given in accordance with provisions of Chapter 130, Section 60 of MGL as amended and Rules and Regulations and Application Requirements promulgated by the Board of Selectmen, that Edward Laspina, 895 Shore Road, Pocasset Pocasset, MA 02559, filed an application on September 3rd, 2020 to establish an aquaculture site within the municipal waters of the Town of Bourne within Buzzards Bay. The applicant is proposing Floating Shellfish Upwellers that will be located within or under the permitted boat slips at the Scallop Bay Marina located at 18 Wings Neck Road, Pocasset, MA 02559. The application, including a plan showing the specific location of the proposed upwellers, can be viewed by emailing csouthwood@townofbourne.com.

A public hearing will be held Via Remote Access on Tuesday, October 6th, 2020 at 7:00 pm. Link to the hearing will be online once the Selectmen Agenda is posted.

BOARD OF SELECTMEN
Judith MacLeod-Froman, Chair
James L. Potter, Vice Chair
George G. Slade, Jr., Clerk
Peter J. Meier
Jared P. MacDonald

For publication in the September 24th, 2020 edition of the Cape Cod Times.

PUBLICATION	DEADLINE*
Monday	Fri. 3:00 PM
Tuesday	Mon. 3:00 PM
Wednesday	Tues. 3:00 PM
Thursday	Wed. 3:00 PM
Friday	Thurs. 3:00 PM
Saturday	Fri. 12:00 PM
Sunday	Fri. 3:00 PM

Display Ads: 3 working days prior to publication.*
Legal Ads: 1 Business Day prior to publication day by 12 noon
*Holiday Deadlines may be earlier.

Legal Notices
508-862-1218 or
classified@capecodonline.com

Classifieds
888-254-3466 or
classifieds@gatehousemed a.com

GENERAL INFORMATION:

Cape Cod Times reserves the right, at its sole discretion, to reject, edit or revise any copy at any time to conform to its policies. All copy must run in proper classifications. Regardless of payment, classified advertising are subject to review and possible rejection by the newspaper.

Payments: All classified ads require prepayment unless an established billable account has been setup. Monthly billing statements are available, please call the advertising department for more information. We accept MasterCard, Visa, American Express and Discover.

Adjustments/Credits: Advertisers are responsible for checking the accuracy for each insertion. Cape Cod Times assumes no responsibility after the first incorrect insertion, nor for errors not affecting the value of the ad. There shall be no liability for non-insertion of any advertisement. Cape Cod Times is not responsible for ads cut of alphabetical or numerical order.

Standards: This newspaper will not knowingly accept real estate or employment ads which violate any form of discrimination or housing laws.

Other: All news and advertising a copyright of Cape Cod Times.

Notice to Advertisers: In accordance with the current rate card, Cape Cod Times reserves the right to convert all advertisements in Cape Cod Times into digital formats with no other products sponsored by Cape Cod Times.

CAPE COD TIMES

CLASSIFIED

Cape Cod's largest Classified Section reaches more than 138,000 readers each day!
888-254-3466

NOTICES
Legal, Public & Town Notices, Bids, Probate, Waterways, Land Court

ANNOUNCEMENTS
Happy Thoughts, Religious, Instructions, Entertainment, Lost & Found

MERCHANDISE
Auctions, Yard Sales, Flea Markets, Antiques, Items For Sale, Animals, Musical

EMPLOYMENT
Child Care, General, Restaurant, Motel/Lodging, Medical, Professional, Sales, Independent, Wanted

BUSINESS
Opportunities, Wanted, Financial, General and Professional Services

REAL ESTATE
Homes, Condos, Land, Trades, Loans, Buyer's Agents, Commercial, Off Cape

RENTALS
Houses, Condos, Apartments, Seasonal, Vacation B&B, Rooms To Rent, Space

BOATING
Power, Sail, and Miscellaneous Services and Wanted

TRANSPORTATION
Autos, Vans, Trucks, SUVs, Motorcycles, Motor Homes/RV, Parts, Services, Leasing

Check Your Knowledge

1. Name the father and son that engineered construction of the Brooklyn Bridge.
2. In the 1920s, millionaire Edward Browning married 15 year old Frances Haneen. The subsequent marital issues made national headlines. What were their nicknames?
3. Speeding the 188 miles from Memphis TN to Canton MS in 1900, engineer Casey Jones was killed when his train crashed into a stalled freight. What was the name of his train?
4. What was the title of Britain's King Edward VIII before he came King in early 1936?
5. Who was known as the match king?

Answers appear further into the Classified section.

Legals

LEGAL NOTICE
SALE OF TOWN OWNED PROPERTY

The Town of Sandwich, Massachusetts will offer for sale at public auction the real estate, with the building(s) thereon, located at 88 Route 130, Sandwich, MA, shown as Lot 68 on the Town of Sandwich Assessors' Map 11, containing approximately 41,818 square feet. The Public Auction will take place on-site at 88 Route 130, Sandwich, MA 02644, on Wednesday, October 21, 2020 at 1:00 P.M. Registration will begin prior to the start of the auction. The Town of Sandwich will be retaining an easement for parking for the benefit of the property known as the Greenville Schoolhouse located at 87 Route 130, Sandwich, MA and shown as Lot 69 on the Town of Sandwich Assessors' Map 11. The location of said easement is to be determined. The Town reserves the right to reject any and all bids if bids are not adequate. The successful bidder will be required to pay a non-refundable deposit in the form of a bank check at the auction in the amount of $20,000.00. The successful bidder will also be required to pay the per forma real estate tax for the remainder of Fiscal Year 2021. A buyer's premium in the amount of 5% of the sale price, and a deed recording fee in the amount of $155.00 at the time of closing. The balance of the purchase price and all fees must be paid on or before December 4, 2020. The property is being sold "As-Is". Any persons intending to bid at the auction should conduct their own investigation. Additional terms and conditions will be announced at the auction. Contact the Zekos Group at www.zekosgroup.com, telephone (508) 842-9000 with any questions.
9/24/2020, 10/1/2020

Town of Bourne
24 Perry Ave
Buzzards Bay, Massachusetts 02532
(508) 759-0600, ext. 1307

PUBLIC HEARING NOTICE

Notice is hereby given in accordance with provisions of Chapter 130, Section 60 of MGL as amended and Rules and Regulations and Application Requirements promulgated by the Board of Selectmen that Edward Lazarus, 895 Shore Road, Pocasset, Pocasset, MA 02559, filed an application on September 3rd, 2020 to establish an aquaculture site within the municipal waters of the Town of Bourne within Buzzards Bay. The applicant is proposing Floating Shellfish Upwellers that will be located within or under the permitted boat slips at the Scallop Bay Marina located at 18 Wings Neck Road, Pocasset, MA 02559. The application, including a plan showing the specific location of the proposed upwellers, can be viewed by emailing randolwood@townofbourne.com

A public hearing will be held Via Remote Access on Tuesday, October 6th, 2020 at 7:00 pm. Link to the hearing will be online once the Selectmen Agenda is posted.

BOARD OF SELECTMEN
Judith MacLeod-Froman, Chair
James L. Potter, Vice Chair
George G. Slade, Jr., Clerk
Peter J. Meier
Jared P. MacDonald

9/24/2020

COMMONWEALTH OF MASSACHUSETTS
BARNSTABLE, SS. BA20P2038PP
PROBATE COURT

To Lisa Ann Reed-Framan of Taunton, MA and to all other persons interested.

A petition has been presented to said Court by Colleen F. Reed of Bourne, MA representing that she holds as tenants in common undivided part or share of certain land lying in Bourne (Pocasset) in said County, and briefly described as follows:

12 Spinnaker Lane, Pocasset, MA 02559

The land and dwelling in the Town of Bourne, County of Barnstable, Commonwealth of Massachusetts, bounded and described as follows: LOT 67, PLAN 21679 D (Sheet 1). Subject to any and all existing rights, reservations, restrictions, easements and encumbrances still in force and effect.

Setting forth that they desire that all of said land may be sold at private sale for not less than Three Hundred Thousand Dollars ($300,000.00), and to that end that a commissioner be appointed to make such partition and be ordered to make sale and conveyance of all, or any part of said land which the Court finds cannot be advantageously divided.

If you desire to object thereto you or your attorney should file a written appearance in said Court at Barnstable before ten o'clock in the forenoon on November 9, 2020, the return day of this citation.

Witness, Arthur C. Ryley, Esquire, First Judge of said Court this 14th day of September, 2020.
ANASTASIA WELSH PERRINO, Register
9/24/2020, 10/1/2020, 10/8/2020

Town of Bourne
Selectmen/Town Administrator's Office
24 Perry Ave
Buzzards Bay, Massachusetts 02532
(508) 759-0600, ext. 1307

PUBLIC HEARING NOTICE

As per MGL Chapter 130 Sec 52, in this Public Hearing any regulations made hereunder shall take effect as therein stated, shall be published by posting a copy of the same in the office of the aldermen city council or selectmen making the same, and in the office of the city or town clerk and in three or more public places in said city or town. These postings include Town Hall and Post Post Office (Buzzards Bay, Pocasset, Monument Beach) as well as the town of Sandwich Clerk's Office.

The recommendations for the 2021 Recreational and Commercial Shellfish Regulations as submitted by the Town of Bourne Department of Natural Resources can be viewed by emailing
ccoulthwood@townofbourne.com.

A public hearing will be held Via Remote Access on Tuesday, October 6th, 2020 at 7:00 pm. Link to the hearing will be online once the Selectmen Agenda is posted.

BOARD OF SELECTMEN
Judith MacLeod-Framan, Chair
James L. Potter, Vice Chair
George G. Slade, Jr., Clerk
Peter J. Meier
Jared P. MacDonald

9/24/2020

CAPE COD COMMISSION

The Cape Cod Commission will hold a public hearing on Thursday, October 1, 2020 at 3:00 p.m. to review the Notice of Intent (NOI) submitted by New England Development and Cape Cod Healthcare, which proposes amendments to the Villages Campus Development Agreement entered into by and between the Cape Cod Commission and Cape Cod Healthcare for property off Williams Lane in Barnstable (Map 296 Parcel 38 Map 296 Parcel 004-001). At the hearing, the Commission may vote to determine whether the proposed amendment development described in the NOI is appropriate and eligible for treatment as a Modification to the Development Agreement.
Pursuant to Governor Baker's Executive Order Suspending Certain Provisions of the Open Meeting law dated March 12, 2020, the Cape Cod Commission will hold this hearing by virtual means, using the Zoom™ meeting platform, with all members participating remotely. Members of the public can join the meeting using one of the following methods:
•By clicking on the following Zoom meeting link: https://capecodcommission.org/zoom
•Going online to capecodcommission.org/zoom and clicking on "Join Virtual Meeting."
•Call in to 1-929-205-6099, meeting ID 968 0382 0087
Anyone wishing to verbally orally will be welcome to do so. Written comments may also be submitted prior to the hearing by electronic mail to regulatory@capecodcommission.org. The NOI and other relevant documents can be accessed at http://www.capecodcommission.org/meetingnotices.
Reasonable accommodations for people with disabilities are available upon request. Please contact the Cape Cod Commission at (508) 362-3828 at least 24 hours in advance of the meeting, for Telecommunications Relay Services (TRS) dial 711. Cada esfuerzo razonable será necesario en cuanto idiomas por favor, contacte a Coordinador de Título VI para teléfono (508) 744-1299 or Para servicios de retransmisión de telecomunicaciones, dequa 711.
09/17, 09/24/2020

Commonwealth of Massachusetts
The Trial Court
Probate and Family Court
Barnstable Division
3195 Main Street
P.O. Box 342
Barnstable, MA 02630
(508) 375-6600
INFORMAL PROBATE PUBLICATION NOTICE
Docket No. BA20P1249EA
Estate of
Robertson Gallery DuBois
Also known as:
Robert DuBois
Date of Death:
December 27, 2019
To all persons interested in the above captioned estate, by Petition of Petitioner Anne R. DuBois of Washington DC a Will has been admitted to informal probate.
Anne R. DuBois of Washington DC has been informally appointed as the Personal Representative of the estate to serve without surety on the bond.
The estate is being administered under informal procedure by the Personal Representative under the Massachusetts Uniform Probate Code without supervision by the Court. Inventory and accounts are not required to be filed with the Court, but interested parties are entitled to notice regarding the administration from the Personal Representative and can petition the Court in any matter relating to the estate, including distribution of assets and expenses of administration.
Interested parties are entitled to petition the Court to institute formal proceedings and to obtain orders terminating or restricting the powers of Personal Representatives appointed under informal procedure. A copy of the Petition and Will, if any, can be obtained from the Petitioner.
09/24/2020

Commonwealth of Massachusetts
The Trial Court
Probate and Family Court
Barnstable Division
3195 Main Street
P.O. Box 342
Barnstable, MA 02630
(508) 375-6600
INFORMAL PROBATE PUBLICATION NOTICE
Docket No. BA20P1049EA
Estate of
Angela Sarmazzuna
Date of Death: June 1, 2020
To all persons interested in the above captioned estate, by Petition of Petitioner Anthony J. Sarmazzuna of Succasunna NJ
a Will has been admitted to informal probate.
Anthony J. Sarmazzuna of Succasunna NJ has been informally appointed as the Personal Representative of the estate to serve without surety on the bond.
The estate is being administered under informal procedure by the Personal Representative under the Massachusetts Uniform Probate Code without supervision by the Court. Inventory and accounts are not required to be filed with the Court, but interested parties are entitled to notice regarding the administration from the Personal Representative and can petition the Court in any matter relating to the estate, including distribution of assets and expenses of administration.
Interested parties are entitled to petition the Court to institute formal proceedings and to obtain orders terminating or restricting the powers of Personal Representatives appointed under informal procedure. A copy of the Petition and Will, if any, can be obtained from the Petitioner.
09/24/2020

Town of Bourne
24 Perry Ave
Buzzards Bay, Massachusetts 02532
(508) 759-0600, ext. 1307

PUBLIC HEARING NOTICE

Notice is hereby given in accordance with provisions of Chapter 130, Section 60 of MGL, as amended and Rules and Regulations and Application Requirements promulgated by the Board of Selectmen that Massachusetts Maritime Academy, 101 Academy Drive, Buzzards Bay, MA 02532, filed an application on September 2nd, 2020 to establish an aquaculture site within the municipal waters of the Town of Bourne within Buzzards Bay. The applicant is proposing 3 Floating Shellfish Upwellers that will be located along the existing Massachusetts Maritime floating piers at 101 Academy Drive, Buzzards Bay, MA 02532. The application, including a plan showing the specific location of the proposed upwellers, can be viewed by emailing ccoulthwood@townofbourne.com

A public hearing will be held Via Remote Access on Tuesday, October 6th, 2020 at 7:00 pm. Link to the hearing will be online once the Selectmen Agenda is posted.

BOARD OF SELECTMEN
Judith MacLeod-Framan, Chair
James L. Potter, Vice Chair
George G. Slade Jr. Clerk
Peter J. Meier
Jared P. MacDonald

9/24/2020

Commonwealth of Massachusetts
The Trial Court
Probate and Family Court
Barnstable Probate and Family Court
3195 Main Street
PO Box 342
Barnstable, MA 02630
(508) 375-6710
CITATION ON PETITION FOR FORMAL ADJUDICATION
Docket No. BA20P1329EA
Estate of
Thomas J. Murphy
Date of Death: 08/25/2020
To all interested persons:
A Petition for Formal Probate of Will with Appointment of Personal Representative has been filed by Michael Cashman of South Yarmouth, MA requesting that the Court enter a formal Decree and Order and for such other relief as requested in the Petition.
The Petitioner requests that Michael Cashman of South Yarmouth, MA be appointed as Personal Representative(s) of said estate to serve Without Surety on the bond in an unsupervised administration.
IMPORTANT NOTICE
You have the right to obtain a copy of the Petition from the Petitioner or at the Court. You have a right to object to this proceeding. To do so, you or your attorney must file a written appearance and objection at this Court before: 10:00 a.m. on the return day of 10/09/2020.
This is NOT a hearing date, but a deadline by which you must file a written appearance and objection if you object to this proceeding. If you fail to file a timely written appearance and objection followed by an affidavit of objections within thirty (30) days of the return day, action may be taken without further notice to you.
UNSUPERVISED ADMINISTRATION UNDER THE MASSACHUSETTS UNIFORM PROBATE CODE (MUPC)
A Personal Representative appointed under the MUPC in an unsupervised administration is not required to file an inventory or annual accounts with the Court. Persons interested in the estate are entitled to notice regarding the administration directly from the Personal Representative and may petition the Court in any matter relating to the estate, including the distribution of assets and expenses of administration.
WITNESS, Hon. Arthur C. Ryley, First Justice of this Court.
September 18, 2020
ANASTASIA WELSH PERRINO
Register of Probate
09/24/2020

Commonwealth of Massachusetts
The Trial Court
Probate and Family Court
Barnstable Probate and Family Court
3195 Main Street
PO Box 342
Barnstable, MA 02630
(508) 375-6710
CITATION ON PETITION FOR FORMAL ADJUDICATION
Docket No. BA20P1329EA
Estate of
John C. Healy
Date of Death: 08/24/2020
To all interested persons:
A Petition for Formal Probate of Will with Appointment of Personal Representative has been filed by Michael J. Healy of Gilmanton NH requesting that the Court enter a formal Decree and Order and for such other relief as requested in the Petition.
The Petitioner requests that: Michael J. Healy of Gilmanton NH be appointed as Personal Representative(s) of said estate to serve Without Surety on the bond in an unsupervised administration.
IMPORTANT NOTICE
You have the right to obtain a copy of the Petition from the Petitioner or at the Court. You have a right to object to this proceeding. To do so, you or your attorney must file a written appearance and objection at this Court before: 10:00 a.m. on the return day of 10/09/2020.
This is NOT a hearing date, but a deadline by which you must file a written appearance and objection if you object to this proceeding. If you fail to file a timely written appearance and objection followed by an affidavit of objections within thirty (30) days of the return day, action may be taken without further notice to you.
UNSUPERVISED ADMINISTRATION UNDER THE MASSACHUSETTS UNIFORM PROBATE CODE (MUPC)
A Personal Representative appointed under the MUPC in an unsupervised administration is not required to file an inventory or annual accounts with the Court. Persons interested in the estate are entitled to notice regarding the administration directly from the Personal Representative and may petition the Court in any matter relating to the estate, including the distribution of assets and expenses of administration.
WITNESS, Hon. Arthur C. Ryley, First Justice of this Court.
September 18, 2020
ANASTASIA WELSH PERRINO
Register of Probate
09/24/2020

Conceptis SudoKu

By Dave Green

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	6		1				3	

Difficulty Level ★★★ 9/24

Legals

ATTENTION
LEGAL ADVERTISERS

The Cape Cod Times is now accepting legal ads via e-mail

classified@capecodonline.com

All e-mails must be sent as a plain text document only

(.txt extension)

All ads require prepayment unless a billable account has been approved prior to publication. The deadline for all legals are 3 working days prior to publication at 3PM. For any further legals inquiries call 508. 862-1218 Monday - Friday 8:30AM-4:30PM

For your convenience, the Cape Cod Times accepts Visa, MasterCard, American Express & Discover

Announcements

Avoiding Scam and Fraud Attempts:

- Be aware of international fraud. Deal locally wherever possible.
- Watch for buyers who offer more than your asking price and who ask to have money wired or handed back to them. Fake cashier checks and money orders are common.
- Never give out personal financial information.
- Trust your instincts and be wary of someone using an escrow service or agent to pick up your merchandise.

Colas: FREE Appraisals
Atlantic Coin. Will Travel
Member ANA 866-8740

Place YOUR OWN – Classified Ad – from dusk 'til dawn and all day long at capecodCLASSIFIEDS.com

Announcements

FIREARMS WANTED: I buy all firearms & neutral. Live local on Cape. Fully licensed. Free appraisal. Jim 508-968-5068

WANTED: GUN COLLECTION 1Gun or entire estate. Antique or modern guns. Vintage decoys/Fishing Gear. Licensed dealer. CALL 401-241-2115 Guaranteed highest price

Wanted: Military Items Swords, Knives, Guns, Helmets, Military Patches, Civil War, WWI WWII, Vietnam, Cash 401-241-2115

Items For Sale

42" Cupola. Copper roof, weather vane lantern. Needs mounting base. $750. Call 508-428-5548

Boyds bears figurine Elliot the Firefighter. Perfect condition. Retired. $18. Call 508-430-0530

CASH FOR RECORD ALBUMS 33 LP'S & 45'S. WANTED. Call George 617-437-1982

compound miter box Hercules model HE74 12 inch compound miter box with matching stand 350.00 like new call Bruce 508 375 5171

Items For Sale

Desk, used White, L-shaped desk with glass top, hutch shelves and chair. Could be used as two desks.

$95. Call 312-925-2718

DOCUMENT SCANNER Micro-Omni Pro. Scans into computer. Excellent Condition $25 OBO. Call 508-398-7961

Firewood Sale Seasoned VT Hardwood. Cut, Split, Delivered. Buy Now & Save! 508-398-9658

For Sale 3 Antique 18th Century Fireplace Mantles. Also Heavy Duty Packing Quilts. Call 508-760-3290 after 5pm.

FREE FURNITURE At very good cond. Sleeper sofa, rattan coffee table + end tables/glass tops, 2 navy chairs, misc. 617-970-3321

Golf Bag For Sale Mens 2019 Sunmountain C130 golf bag, blue. $145. 781-738-4856

HOSES 2 hoses,25'&50' $10.00&20.00 or BO 508-398-7961

Kitchen chairs different styles. 6 altogether. $10 each. Call 508 430-0530.

Ladder Folding scaffolding, heavy duty. Call 508 430-0530.

LUGGAGE 1 Samsonite hard cover suitcase, wheels and pull handles. $20.00 or BO Call 508-398-7961.

MOVING SALE Craftsman 1.25 hp Router (NEW) $20. 7.25" Circular Saw (OLD) $20. 10' Sliding Miter Saw $75. Winder Flex Gym $60. 40.5"x35.0" Garden Window (NEW) $100. 508-430-2543

TOWN OF BOURNE
Department of Natural Resources

24 Perry Avenue - Room 102
Buzzards Bay, MA 02532-3441
http://www.townofbourne.com

Shellfish Constable, Marinas, Herring Agent, Harbor Master, Fish & Game Enforcement, Conservation Enforcement & More

OFFICE: (508) 759-0621
POLICE: (508) 759-4451
MARINAS: (508) 759-3105
FAX: (508) 759-8026

AQUACULTURE/SHELLFISH GRANT PERMIT APPLICATION

Requirements are specified in the accompanying Aquaculture/Grant Regulations; If all requirements are met, complete this Application and submit with the appropriate payment (Payable to "Town of Bourne") to the Department, along with a copy of your Drivers License or State ID Card, and any supporting documentation specified in the Regulations, requested by the Department or indicated below, or that you feel may assist us in making a determination to approve your Application. The burden of any proof regarding eligibility and requirements rests solely with the Applicant. *** Complete all information and print clearly ***

NEW: **X** RENEWAL: _____

PROPOSED LOCATION OF GRANT: Describe below the specific measurements in feet of the desired area using land boundaries when possible. Attach a sketch or locus map indicating the boundaries and total square feet.

PRIMARY SITE REQUESTED: **18 Wings Neck Rd., Pocasset, MA 02559**

ALTERNATE SITE REQUESTED: _____

NAME (FULL): **Edward Laspina** DATE OF BIRTH: **9/5/62**

PLACE OF BIRTH: **Melrose, MA**

LEGAL ADDRESS: **895 Shore Rd. Pocasset, MA 02559**

HOME PHONE: **N/A** CELL PHONE: **617-281-4329**

EMAIL ADDRESS: **eddie@scallopbaymarina.net**

TIME AT ABOVE ADDRESS: **1.5 yrs**

IF LESS THAN 1 YEAR, PREVIOUS ADDRESS: _____

*ATTACH EVIDENCE OF RESIDENCY

MAILING ADDRESS (If Different): **18 Wings Neck Rd., Pocasset, MA 02559**

CURRENT/PREVIOUS TOWN PERMITS & DATES: **N/A**

OTHER/PREVIOUS TOWNS & DATES PERMITTED IN: _____

LIST ANY DENIALS/VIOLATIONS IN ANY TOWN: _____

*ATTACH MA COMMERCIAL PERMIT – PERMIT #: _____ YEARS HELD: _____

PRIMARY OCCUPATION: **Marina service technician**

EMPLOYER/ADDRESS/PHONE: **Scallop Bay Marina, Pocasset, MA: 508-563-3213**

*ATTACH PRIMARILY USED VEHICLE REGISTRATION – REG #: **V79766**

VEHICLE MAKE: **Ford** VEHICLE MODEL: **F250** VEHICLE COLOR: **White**

* ATTACH BOAT REGISTRATION – MS/DOC #: **MS 0358 DS**

BOAT LENGTH: **21'** BOAT COLOR: **Grey** BOAT TYPE: **Wooden skiff**

- **ANY CHANGES IN THIS INFORMATION MUST BE REPORTED TO THE D.N.R. IMMEDIATELY!**

I, the undersigned and as named on Page 1, affirm that the information on Pages 1 & 2 of this Application is true, complete and correct and affix my signature hereto under the pains and penalties of perjury. By signing below, I agree to abide by the Shellfish Regulations and any other applicable rules and regulations of the Town of Bourne, as well as all applicable laws, rules and regulations of the Commonwealth of Massachusetts. I understand that perjury, misleading statements, or failure to abide by any laws, rules and regulations may result in permit denial, suspension, or revocation; without compensation or reimbursement, if suspended or revoked.

SIGNED: _____ DATE: September 4, 2020

Request for
Class II Type III Marine Aquaculture Permit

Submitted To:
Town of Bourne, Massachusetts
Board of Selectmen
Town Hall
24 Perry Ave.
Buzzards Bay, MA 02532

July 2020

Daniel Ward, PhD and Jeff Lang
Nantucket Sound Bay Scallop Company
18 Wings Neck Rd.
Pocasset, MA 02559

July 17, 2020

Town of Bourne, Massachusetts
Board of Selectmen
24 Perry Avenue
Buzzards Bay, MA 02532
Ph: (508) 759-0600

Subject: Request for Class III Marine Aquaculture Permit
Nantucket Sound Bay Scallop Company, Bourne, MA

To Whom It May Concern,

Nantucket Sound Bay Scallop Company, LLC (NSBSC) is a commercially-focused shellfish company aquaculture company which was started by Jeff Lang and Daniel Ward, PhD in 2019, with the goal of producing bay scallops in and around Cape Cod. Mr. Lang is new to aquaculture, and therefore, he has partnered with Dr. Ward, who owns Ward Aquafarms, LLC which has a robust research and innovation program with the ultimate goal of improving aquaculture production in the United States.

In March 2020, NSBSC purchased Bucky Barlow's Boatyard, located at 18 Wings Neck Rd., Pocasset, MA 02559, which was subsequently re-titled, Scallop Bay Marina. The intent of the purchase was to maintain the current marina and service operation, including all sales, service and slip and mooring rentals. In addition to the marina activities, the goal is to utilize the existing marina building to start a commercial shellfish hatchery, and to locate floating upwellers, downwellers and trays within and under the existing permitted docks. The following document explains the location, method of shellfish culture and all associated information regarding current commercial operation.

To secure a lease to perform commercial aquaculture activities in the Commonwealth of Massachusetts, there are many local, state and federal approvals which must be secured prior to starting any farming activities. These agencies include the Bourne Conservation Commission, state Department of Environmental Protection, state Division of Marine Fisheries, federal Army Corp of Engineers, among many other agencies which review the proposed project. One of the primary review aspects, and the most time consuming, is a required biological survey, due to MGL Chapter 130 Section 57:

After receipt of a written application by the city council or selectmen, and after the notice and public hearing requirements of this section are satisfied and the licensing authority approves the application, the director shall, after inspection of the intended project area, certify that issuance of a shellfish aquaculture license and operation thereunder will cause no substantial adverse effect on the shellfish or other natural resources of the city or town. Upon such certification by the director, the city council or selectmen may issue the license, provided, however, that no license shall be issued for any areas then or within two years prior thereto, closed for municipal cultivation under the provisions of section fifty-four.

After discussing the proposed project with both Christopher Southwood, Director of the Bourne Department of Natural Resources, and the state Division of Marine Fisheries, shellfish division, it was determined that the first step in the permitting process, is to request the Bourne Board of Selectmen to request, in writing, a biological survey of the project location by the Division of Marine Fisheries. Therefore, this letter is to request that our application to farm bay scallops in Bourne, can be added to the Board of Selectmen agenda, as soon as possible following the required public notice period.

Sincerely,

Daniel Ward, PhD and Jeff Lang
Nantucket Sound Bay Scallop Company
18 Wings Neck Rd.
Pocasset, MA 02559
Ph: 774-255-3030
Email: dan@wardaquafarms.com

Detailed Site Plan

The proposed plan for the hatchery at the Scallop Bay Marina is only to produce bay scallops seed in the hatchery through 1 mm shell height, then transfer the shellfish to outside nursery and growout systems for the remainder of the farming process. The only species to be produced is native to Massachusetts waters: bay scallops (*Argopecten irradians*). Prior to transfer out of the hatchery to the nursery, and prior to transfer from the nursery to another growout site, after receiving a clean pathology report, the bay scallops will either be sold to other growers for growout, or transported to one of Ward Aquafarms' growout sites for further production.

Ideally, any aquaculture farm would have a sandy or muddy bottom where the shellfish could be thrown onto the bottom for grow out. In the area of the Scallop Bay Marina within the Pocasset River, the entire bottom of the proposed lease area is comprised of thick silty mud with the consistency of mayonnaise (Fig. 1). The bottom of the proposed area is not currently conducive to shellfish growth or survival, and therefore the water column above the poor quality bottom would be ideal to avoid conflicts with commercial and recreational shellfishermen.

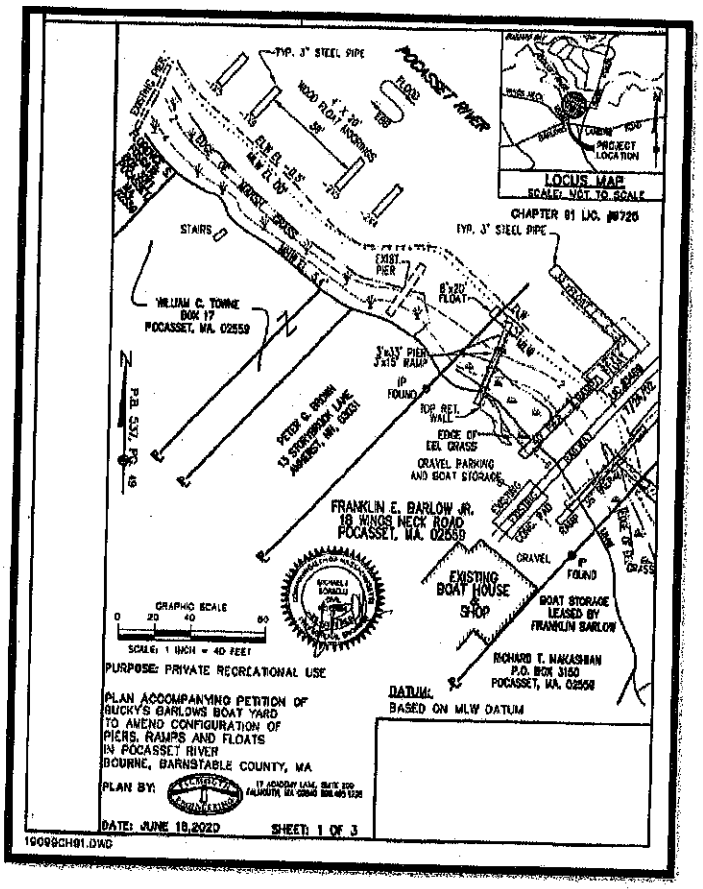

Figure 1:Scallop Bay Marina, location of the proposed NSBSC Hatchery, located on the Pocasset River, Pocasset, MA.

All hatchery production will occur within the existing building at the Scallop Bay Marina, 18 Wings Neck Rd., Pocasset, MA 02559. The property has been utilized as a boatyard and marina since 1951, and has been approved by the Bourne Zoning Department for both commercial marina activities, as well as all agricultural purposes (Fig. 2). The building measures 30' wide x 70' long, and hatchery production will only occur in the entire building, closest to the Pocasset River, and all of the remaining buildings on site (to the south) will be only utilized for marina activities or for storage. Water will be pumped from the Pocasset River, or discharged into the Pocasset River at the end of the fixed pier. All nursery activities will take place in floating upwellers or downwellers, located within, or under one or more of permitted slips noted in Figures 1-3. All upwellers and downwellers will be constructed of wood, fiberglass or aluminum, and will fit within a standard boat slip measuring 10' wide x 20' long.

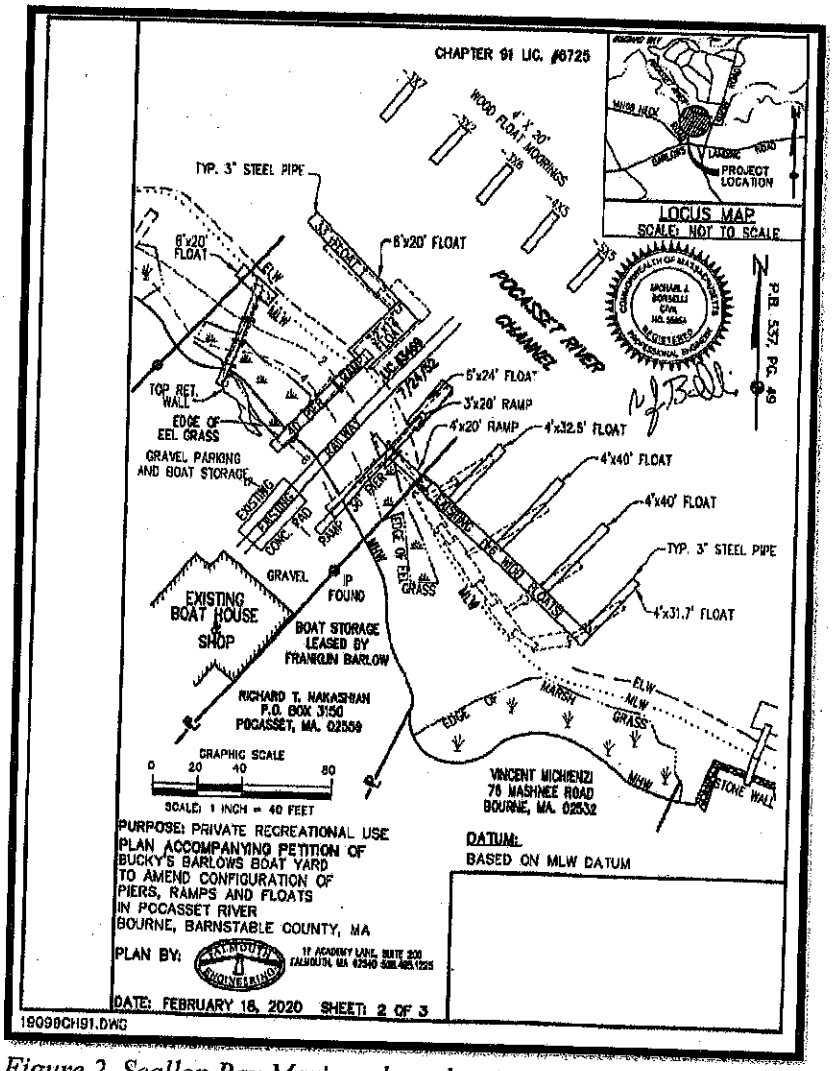

Figure 2. Scallop Bay Marina plan, showing currently permitted piers and floats, which will be utilized for bay scallop aquaculture activities

2. Detailed system layout, including water treatment systems;

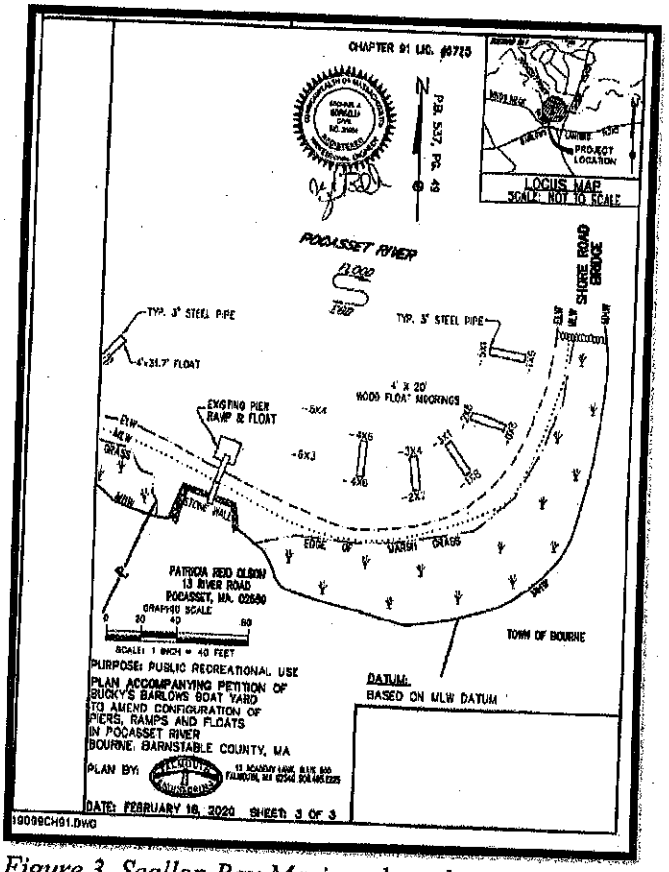

Figure 3. Scallop Bay Marina plan, showing currently permitted piers and floats, which will be utilized for bay scallop aquaculture activities

Hatchery

The hatchery production process requires that river water be brought into the marina building, held in tanks, where it will be mechanically filtered, and then heated or chilled, depending on the environmental preferences of the shellfish. In order to bring water into the building, a 1.5" ID hose will be unfurled from the front door of the building on the eastern side (Fig. 2), and a 1 hp sump pump will be put into the water, from the end of the fixed pier already installed and permitted at the Scallop Bay Marina. Water will be pumped into the building, filtered to 10 μ using a filter sock or canister filter, and stored in aluminum-reinforced 1000 L polyethelene tanks. There will be a maximum of 100' of border area (the Scallop Bay Marina parking lot) temporarily impacted by the water pumping and discharge activity.

The hatchery production system consists of three distinct sections: 1) water holding, 2) algae production, and 3) shellfish holding/production, all of which occur in the rear section of the building, furthest from the Pocasset River, and all of the remaining buildings to the south will be only utilized for marina activities or for storage. Water holding consists of a series of 1000 L

aluminum-reinforced polyethelene tanks where water can be held prior to use, or after use, when the tide is not correct for pumping from, or discharging into, the Pocasset River. Within these static tanks, the water can be sterilized through heating, or the additional of sodium hypochlorite prior to use for algae culture.

Microalgae

All algae culture occurs within an enclosed insulated room at the front of the building adjacent to the front door, measuring 15' W x 20' L. Starter cultures are maintained in 125 ml and 250 ml glass flasks, and larger algae volumes are held in 1 L glass flasks, 5 L polycarbonate containers, 25 L polycarbonate containers, or 400 L polyethelene bags.

Broodstock

Broodstock will be held in the room adjacent to the algae culture room in fiberglass tanks. Adult bay scallops will be held in several, static 2.3 m L x 0.8 m W x 0.3 m H fiberglass tanks. The tanks will be filled with 10 μ filtered water from the holding tanks, and once every 24 hrs the broodstock tank will be siphoned to remove 40 L of water, which will be returned to the discharge water holding tank.

Larvae

Larvae will be stocked into one of five different conical tanks for static culture; two tanks are 50 L capacity, two tanks are 300 L capacity and one tank is 1000 L capacity. Water will be pumped from the holding tank, further filtered to 1 μ with a filter sock or canister filter, and heated to 20° C prior to adding the embryos, and air will be bubbled into the tank continuously throughout the culture cycle. Every 48 hrs, the water and larvae will be drained through the appropriate size mesh sieve to collect the growing larvae, with the used water returned to the discharge holding tank. Once the larvae have reached competency and are ready to set, the larvae will be held in a series of 45 cm diameter polyvinyl chloride silos, lined with 200 μ nylon mesh, in one, static 2.3 m L x 0.8 m W x 0.3 m H fiberglass tank.

3. Detailed operational plan (species, planting density, feeding rates, source of brood stock, quarantine procedures, etc.);

The species to be produced is native to Massachusetts waters: scallops (*Argopecten irradians*). No more than 50 of any given broodstock species will be held in the conditioning tank at any one time. Feeding of broodstock will range from 0.5 – 2.0 L of cultured microalgae per animal per day, depending on species density.

All bay scallop broodstock will either be of wild origin from Massachusetts approved waters, from Ward Aquafarms, LLC growout site in Megansett Harbor (Falmouth license A11-05), or transferred from a Massachusetts Division of Marine Fisheries-approved shellfish wholesale dealer or hatchery facility. Additionally, Ward Aquafarms may source eggs, sperm, or eyed larvae from MA DMF-approved hatcheries throughout New England for setting within the Ward

Aquafarms hatchery, and subsequent nursery growout following a clean pathology report approved by MA DMF.

All cultures at the hatchery (microalgae, broodstock and larvae) are in static tanks. All water will be returned to the discharge holding tanks prior to discharge to the same location the water was removed from, into the Pocasset River.

Microalgae

All algae culture occurs within an enclosed insulated room at the rear of the building adjacent to the front door, measuring 15' W x 20' L. Starter cultures are maintained in 125 ml and 250 ml glass flasks, and larger algae volumes are held in 1 L glass flasks, 5 L polycarbonate containers, 25 L polycarbonate containers, or 400 L polyethelene bags. Water for the 125 ml, 250 ml and 1 L cultures is pumped from the holding tank (filtered to 10 μ), further filtered to 1 μ, and held in an intermediate container where silicates (sodium metasilicate, 13 mg/L) and F/2 nutrients are added (1 ml/7.75 L seawater). The water is then added to the individual flasks, heated to 72° C for 60 seconds, capped with aluminum foil and allowed to cool. Water for the 5 L, 25 L and 400 L algae culture is sterilized through the addition of sodium hypochlorite (0.5 ml/ L) to the water, adding the water to the culture vessel, and bubbling for 24 hrs. At the conclusion of 24 hrs sodium thiosulfate (0.25ml/ ml sodium hypochlorite) is added to each culture vessel, in addition to the required sodium metasilicate and F/2 necessary. The water is then bubbled for 60 minutes to allow for dechlorination, and then each culture vessel is inoculated with the algae of choice. The hatchery produces seven different species of algae necessary for shellfish broodstock and larval culture: *Chaetoceros calcitrans, Isochrysis galbana (*T-Iso*), Isochrysis galbana (*C-Iso*), Pavlova lutheri, Nannochloropsis oculata, Thalassiosira weissflogii,* and *Tetraselmis chui.*

Broodstock

Broodstock will be held in the room adjacent to the algae culture room in fiberglass tanks. Adult bay scallops will be held in several, static 2.3 m L x 0.8 m W x 0.3 m H fiberglass tanks, with constant air supplied by four airstones from two different air pumps, and water temperature maintained by three, 300 W titanium digitally-controlled heaters. The tanks will be filled with 10 μ filtered water from the holding tanks, and algae will be pumped from the algae room, into the broodstock tank at a rate of 40 L/ day. Once every 24 hrs the broodstock tank will be siphoned to remove 40 L of water, which will be returned to the discharge water holding tank.

Larvae

Broodstock will be spawned, eggs and sperm collected, and then following fertilization, embryos will be stocked into one of five different conical tanks for static culture; two tanks are 50 L capacity, two tanks are 300 L capacity and one tank is 1000 L capacity. Water will be pumped from the holding tank, further filtered to 1 μ, and heated to 20° C prior to adding the embryos. The water will be heated to 20° C and air will be bubbled into the tank continuously throughout the culture cycle. Every 48 hrs, the water and larvae will be drained through the appropriate size mesh sieve to collect the growing larvae, with the used water returned to the discharge holding

tank. A replicate conical tank with pre-filtered and heated water will be restocked with the larvae at the correct density. The used larval water will be returned to the discharge water holding tank.

Once the larvae have reached competency and are ready to set, the larvae will be held in a series of 45 cm diameter polyvinyl chloride silos, lined with 200 μ nylon mesh, in one, static 2.3 m L x 0.8 m W x 0.3 m H fiberglass tank. Microalgae will be added to the tank daily, and water will be constantly recirculated through the silos, as well as the water being continuously heated and aerated. The post-set shellfish will be graded every 7 days, and maintained in the static downweller tank until they have reached a 750 μ shell height, at which point they will be brought from the hatchery to one of the floating upwellers for further growout. No chemicals or antibiotics will be used in the production of the shellfish larvae, aside from standard, commercially-available cleaning products for cleaning the tanks and hoses.

Nursery

The nursery system will include floating upwellers, floating downwellers, and hanging trays located under the existing floats. Floating upwellers are known within the aquaculture industry as FLUPSYs (Floating Upweller SYstems), which protect fragile juvenile shellfish (bay scallops), and help increase food (microalgae) passing by the growing shellfish. The shellfish are transferred from a hatchery at approximately 1 mm (about the size of a grain of sand). Up to 1 million shellfish are then placed within the 8 bays of the upweller (Fig. 4), where they are grown until approximately ½-1", when they can then be sold or transferred to the grow out site.

Upwellers

Figure 4: FLUPSY with the doors open to show the 8 21"Lx21"Wx24"H bays where up to 1 million oysters are grown.

The vast majority of the time, the upweller is closed, and appears to be like any other 8' x 20' wooden dock (Fig. 5). It is only when the upweller is open (2-4hrs per week) that anyone would know that there is anything else under the dock they are standing on. The principle of the upweller is that there is a central trough running down the center of the modified dock. Attached to that trough, slightly below the water line, are 4 silos (21"L x 21"W x 24"H) to both the right and the left (Fig. 4). Up to 125,000, 1 mm bay scallops are placed in each silo, resting on 1mm mesh attached to the bottom. Water is pumped out of the trough using an Ice Eater pump (3/4hp, 600-900 gallons per minute), and the only place for water to refill the trough to come from is from the silos. The water to fill the silos must come from underneath the oysters in the silos, therefore more water is passed over the shellfish, which means more food (microalgae in the water), which means faster growth. The faster the shellfish grow, the faster they can be moved out to the growout site, and the more likely they are to survive the annual algal blooms in Buzzard's Bay.

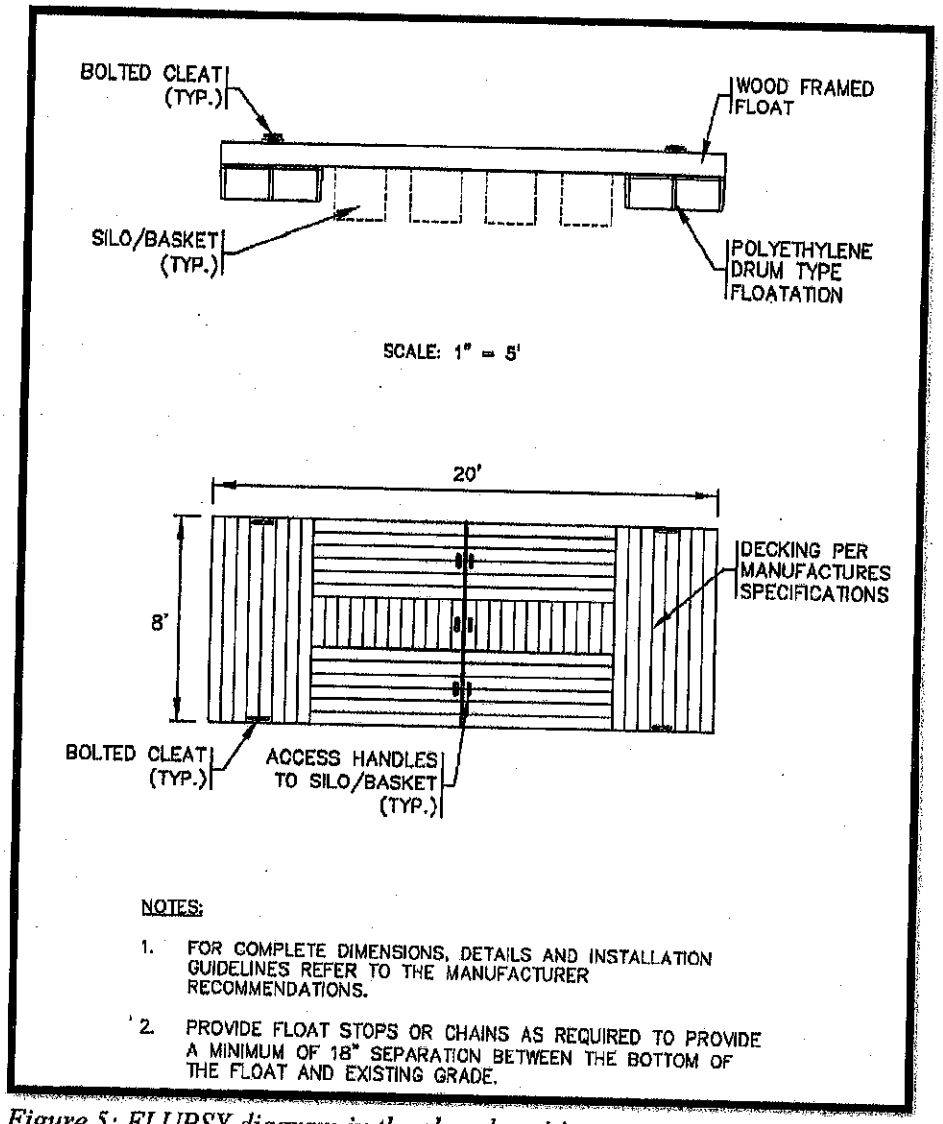

Figure 5: FLUPSY diagram in the closed position, appearing as any normal 8' x 20' dock.

The proposed locations (Figs. 1-3) are located within the existing reconfiguration zone of the Scallop Bay Marina, in Pocasset, MA. The intent is to both allow for expansion in the future, and to allow for the flexibility to temporarily install floating nursery systems in any of the existing permitted locations at any time, such that the systems can be moved based on slip availability, environmental circumstances, or any other reason which may require modifying the location of the nursery systems throughout the season. All of the nursery systems are temporary, and will only be installed within a slip while the marina is operating with the floating docks installed. This period is generally from April 1 – November 1 each year. The proposed upwellers will utilize a Ice Eater pump (3/4hp, 5A @ 120V= 600W) operating 24 hours per day. The upwellers will be installed no later than May 1, and will be removed by November 1, however, actual days of operation will entirely depend on production of the hatchery raised shellfish seed.

Downwellers and Hanging trays

The proposed project would repurpose existing 6' wide by 20' long floating docks to grow bay scallops below the floats in the water below. The structures replacing the existing docks would be the same width, height, and freeboard above the water surface, and for all intents and purposes would appear as any standard floating dock (Fig. 6). Below the doors, are bay scallops being grown from a minimum of 10 mm shell height, through market size (minimum 60 mm shell height) year round. The structure may facilitate growth through upwelling flow, downwelling flow, or ambient flow through submerged trays. The footprint and square footage of cover is the same, with the only difference between water flow direction past the animals being either an upward motion, downward motion, or horizontal motion (ambient flow). The explanation below of upwellers is the same as the other proposed methods, with the only difference being flow direction.

Figure 6: Floating downweller with the doors closed to look like a standard dock.

The downweller design starts with the same floating 8'W x 20'L footprint of a typical shellfish FLUPSY, therefore taking advantage of pumping water laterally, resulting in high flow for low cost (Fig. 6). Under the doors are six silos (3'W x 3'L x 4'H); three on each side of a central trough (1'W x 9'L x 5'H). Each silo has a 4" opening at the top to allow water to enter. Attached to the pipe is a 36" downpipe to pull water from below the waterline in order to avoid contaminants on the water surface. Each silo drains into the central trough through a 3"H x 36"L gap at the bottom of the silo. With a 3/4 hp pump attached in the central trough, this design can yield approximately 150 gal/min per silo. Each silo can accommodate up to 6, 3'W x 3'L x 4"H

trays stocked with scallops. Since the flow is reversed and goes in at the top and down through the shellfish and out of the system, the scallops cannot swim out of the system at any time. Additionally, since each silo now has 6 trays instead of one mesh bottom, surface area in the system increased from 32ft^2 in a standard FLUPSY to 324ft^2 in the redesigned floating downweller.

The intent is not to have upwellers, downwellers (Fig. 7) and ambient flow systems in place simultaneously for the foreseeable future. The intent is to both allow for expansion in the future, and to allow for the flexibility to temporarily install floating nursery systems in any location within the identified location at the Scallop Bay Marina. at any time, such that the systems can be moved based on environmental circumstances, or any other reason which may require modifying the location of the nursery systems throughout the season.

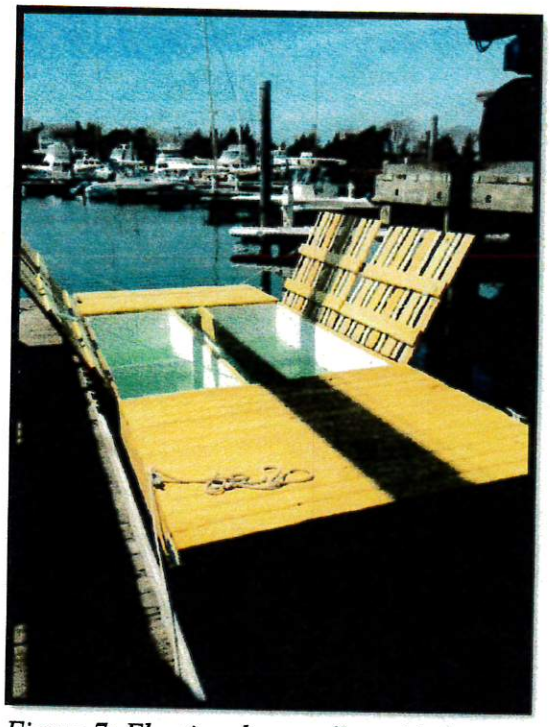

Figure 7: Floating downweller with doors open to show silos.

By installing a floating dock in the proposed location from March 1 through December 31 annually, the project will be contributing to improving water quality. Dr. Ward will provide materials to educate the public about the great ecosystem services provided by shellfish aquaculture, and he will also provide monthly demonstrations of aquaculture operations, and answer any questions about aquaculture in general.

Ecosystem services

In 2016, Ward Aquafarms partnered with the Town of Bourne municipal shellfish aquaculture program to culture oysters within the very river outlined in this proposal. The oysters grew very

well, survival was above 95%, which demonstrated that shellfish will grow quite well in the Pocasset River. By installing the proposed structures in the proposed location, the marina will be contributing to improving water quality. Both Mr. Lang and Dr. Ward will provide materials to educate the public about the great ecosystem services provided by bay scallop aquaculture, and they will also provide monthly demonstrations of aquaculture operations, and answer any questions about aquaculture in general. Overall by weight, shellfish are approximately 1.4% nitrogen (Rice et al. 2001; Shumway et al. 2003) therefore; a commercial farm harvesting approximately 10,000 oysters per week would permanently remove the nitrogenous equivalent of 40-50 coastal homeowners (Rice et al. 2001; Shumway et al. 2003). Shellfish aquaculture not only removes nitrogen through the accumulation of protein (body mass) they also contribute to biological processes through sedimentation that results in additional conversion of 20% or more of the nitrogen of oyster waste and subsequent removal from the ecosystem (Rice et al. 2001; Newell et al. 2003; Pietros and Rice 2003). Additional nitrogen removal through sedimentation and off-gassing is extremely hard to quantify, through anecdotal evidence suggests that microbial removal of nitrogen may be up to 10 times the amount of nitrogen which is removed through harvesting alone. As the ecosystem is repaired, and the amount of nitrogen in the system is reduced, the estuary will begin to function properly again, bringing back normal estuary services which will further drive down ambient nitrogen levels through greater overall ecosystem health.

4. Waste disposal plan (including solids, culls, and water).
All filter socks and canisters will be rinsed in a sink with freshwater, which then will drain into the municipal sewer which the marina is connected to. Once the filters have reach the end of their useful life, they will be disposed of in the dumpster at the Scallop Bay Marina to go to a landfill.

All culls will be also disposed of in the dumpster at the Scallop Bay Marina to go to a landfill. All water from the broodstock or larval tanks will be returned to a discharge holding tank, where, at high tide, the water will be pumped back into the Pocasset River. Each tank will only be drained 90%, and monthly any solids remaining in the discharge holding tanks will be collected, desiccated to the greatest extent possible, and disposed of in the dumpster at the Scallop Bay Marina to go to a landfill.

5. Proposed discharge, including volume and treatment, if required;
After the water has been held within one of the static systems inside the marina building, and has been used to grow the microalgae, larvae, or condition the broodstock, the water must be refreshed with new water. At this point, the water which had been used will be returned to the river, to the same location, at the end of the fixed pier at the marina (Fig. 1). There will be no more than 5,000 L per day either pumped from, or discharged into the Pocasset River.

6. Evidence of DEP Water Quality Certification or exemption
We will emaileCathy Vakalopoulos (Massachusetts Department of Environmental Protection Winter St., Boston, MA 02108, 617-348-4026 catherine.vakalopoulos@mass.gov) requesting an exemption to MA DEP Water Quality Certification, given that the proposed facility is not going to produce more than 20,000 lbs/year and feed more than 5,000 lbs max monthly, and therefore no individual NPDES permit is needed.

7. Evidence of NPDES Permit or exemption

We will email Cathy Vakalopoulos (Massachusetts Department of Environmental Protection Winter St., Boston, MA 02108, 617-348-4026 catherine.vakalopoulos@mass.gov) requesting an exemption to MA DEP Water Quality Certification, given that the proposed facility is not going to produce more than 20,000 lbs/year and feed more than 5,000 lbs max monthly, and therefore no individual NPDES permit is needed.

8. Evidence of permits for intake and discharge structures.

In addition to the documents required, a Change of Use application will be filed with MA Department of Environmental Protection to include aquaculture activities, in addition to already permitted marina activities.

Appendix A.

Ward Aquafarms, LLC

Dr. Ward is also the owner of Ward Aquafarms, LLC and the business was initiated as a 2.60 acre farm, and was originally permitted to grow both Eastern oysters (*Crassostrea virginica)* and quahogs (*Mercenaria mercenaria*). The operation expanded to a nursery area in adjacent Fiddler's Cove in 2013, expanded the growout area to 10 acres in 2014, and was approved to start growing bay scallops (*Argopecten irradians*) in the same year. The farm currently comprises over 1,200 cages containing over 1 million oysters from 6 months to 2 years old. Each year the farm plants a minimum of 1 million oysters and 1 million bay scallops commercially, in addition to over 1 million shellfish planted through propagation efforts in collaboration with Cape Cod municipalities.

Ward Aquafarms owns three nursery systems, and real-time environmental sensor packages are installed on both the upwellers and downweller. Ward Aquafarms possesses all of the necessary equipment to run both a commercial oyster farm, and a high-quality field-based research operation. A 15' x 30' float is moored at the growout site. The site has a sorter, a 500W solar system, dual 390 Ah battery backup, thermal image camera installed, and 4G-connected WiFi enabled hot spot. This includes equipment such as: air compressor, air-powered clips guns, air-powered cutting tools, drills, saws, grinders, generators, solar power, battery backups, two winches, three 390 Ah deep-cycle batteries, tumblers, boats, marine-rated engines, SCUBA equipment, underwater cameras, waterproof tablets (iPads), hooks, totes, bushel baskets, etc. For field-based research activities, all of the above equipment is available for use, in addition to: extensive glassware (beakers, flasks, graduated cylinders, etc.) extensive plastic volumetric research tools, digital calipers, digital scales, benchtop autoclave, laptops, software (arcGIS, SAS, Prism, Excel, Word, PowerPoint, Photoshop, Sketchup, etc.), recirculating pumps, tanks, heaters, and chillers.

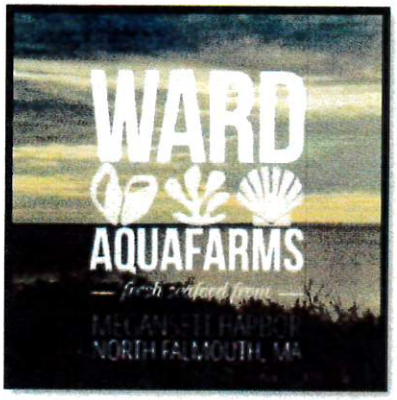

Figure 8 : View of Ward Aquafarms' subtidal lease in Megansett Harbor, North Falmouth, MA.

In research and consulting, the core areas of competency involve aquaculture of many temperature species local to New England. This includes experience in non-profit municipal propagation, commercial production of numerous shellfish, finfish and seaweed species, research of many species of shellfish, finfish and seaweed species throughout the New England range, including in tanks, larval, juvenile, and adult stages, hatchery production, offshore aquaculture, submerged and floating. The project team also has experience in grant writing, publishing, marine engineering, aquaculture IoT, app development, water quality sensor development, harmful algae bloom detection and mitigation, education, outreach, including collaboration with farmers and regulators.

Nantucket Sound Bay Scallop Company

The proposed project will be primarily organized and managed by Daniel Ward, PhD. Dr. Ward is both the owner of Ward Aquafarms, and a research scientist, and has been managing the growing oyster company since its inception in 2011, and is the primary contact for all sales, permitting (3 sites), outreach and farm business. In the last 10 years, Dr. Ward has also either written or co-written, and subsequently organized and managed as a PI many federally funded grants, including funding from, but not limited to: NOAA S-K, NOAA NH SeaGrant, NOAA RI SeaGrant, NOAA Woods Hole SeaGrant, NOAA Research Set Aside Program, USDA NRAC, USDA NE SARE and USDA AFRI NIFA. Ward Aquafarms, LLC has partnered with the Bourne Department of Natural Resources since 2017 to improve and maintain their propagation program, which has included a public:private partnership sharing labor, gear, and expertise for the benefit of Bourne shellfish resources. In addition, Ward Aquafarms, LLC has partnered with the Town of Falmouth, MA for the previous two seasons to grow bay scallops in Town upwellers, and 200,000 bay scallops have been donated to the Town of Falmouth for bay scallop restoration activities.

Ward Aquafarms also has a robust biological research program which tracks many different factors impacting farm performance, and correlates product yield and growth rates with the different factors to help both the existing farm, as well as other farmers succeed throughout New England. Over the past five years, the research has included tracking growth rates of scallops and oysters from nursery stage (1 mm) through final market product (75 mm) year-round, under different stocking densities, depths, gear configurations and farm areas. A two-year USDA-funded project assessing the impacts of the harmful algae *Cochlodinium polykrikoides*, has documented the impacts on commercially important shellfish species, and identified mitigation strategies. An ongoing NOAA Saltonstall-Kennedy project will continue to investigate bay scallop farming success in diverse environments throughout Cape Cod in many different gear types, with high environmental variability.

Figure 9 : Image of Cape Cod, with Megansett Harbor (North Famouth, MA), inset. 10 acres permitted to Ward Aquafarms, LLC for shellfish farming shown as white boxes.

In the state of Massachusetts, prior to initiating commercial aquaculture activities, each farm must gain approval from the following local, state and federal agencies: Town Conservation Commission, Town Board of Selectmen, US Coast Guard: Private Aids to Navigation, Commonwealth of Massachusetts Board of Underwater Archaeological Resources, Massachusetts Department of Marine Fisheries: Shellfish Propagation Permit, Massachusetts Department of Environmental Protection, US Army Corp of Engineers and 5 different Federally Recognized Indian Tribes. Ward Aquafarms, LLC has received approval from all of the above agencies to grow shellfish on their leases for commercial sale three times for the three separate leases in Falmouth. Given the extensive collaborations between Ward Aquafarms, LLC and the

Towns of Bourne and Falmouth, MA, and all the permitting required for those projects, the principals are confident any and all regulations will be followed and all permits will be in place prior to starting any project activities.

Relevant Project Experience:

Town of Bourne, Massachusetts

In February of 2017, Dr. Ward was approached by Tim Mullens, the Shellfish Contrable and Director of Natural Resources for the Town of Bourne, MA. Mr. Mullens was interested in the innovative approaches utilized at Ward Aquafarms, and inquried about improving the methods, approach and output of the Bourne Propagation Program. Dr. Ward, in collaboration with Mr. Paquette and Mr. Tobi, designed and implemented a comprehensive inventory of the existing Bourne Propagation Program, improvements to be implemented in 2017, and research activities to be implemented to document program shellfish yield. The collaboration has continued into 2018, and resulted in a sustainable long-term public:private partnership. Ward Aquafarms contributes labor when needed, and expertise in culturing new species and improving the culture of existing species. This allows the Town of Bourne to reduce staffing costs, as Ward Aquafarms can dynamically supply labor when only when needed, which improves employee utilization at the farm, and improves educational and outreach activities for both organizations. In 2017, Dr. Ward was able to increase the species cultured from simply eastern oysters and quahogs, to include soft shell clams (*Mya arenaria*) and bay scallops, which was welcomed both by the Town Board of Selectmen and local stakeholders. Ward Aquafarms was the principal firm operating two Town-owned upwellers, four subsequent nursery areas, four additional growout areas for aquaculture propagation (Fig. 9). Dr. Ward also collaborated on quahog relays, closing areas to harvest, shellfish sampling for disease testing, water sampling for fecal coliform, drafting propagation permit applications in collaboration with the Town Department of Natural Resources and the MA Division of Marine Fisheries, and planting all shellfish produced throughout the year. Dr. Ward was instrumental in increasing the propagation program over 100% from 2017-2018, planting in excess of 1 million animals per year, over four separate species with distinct environmental preferences.

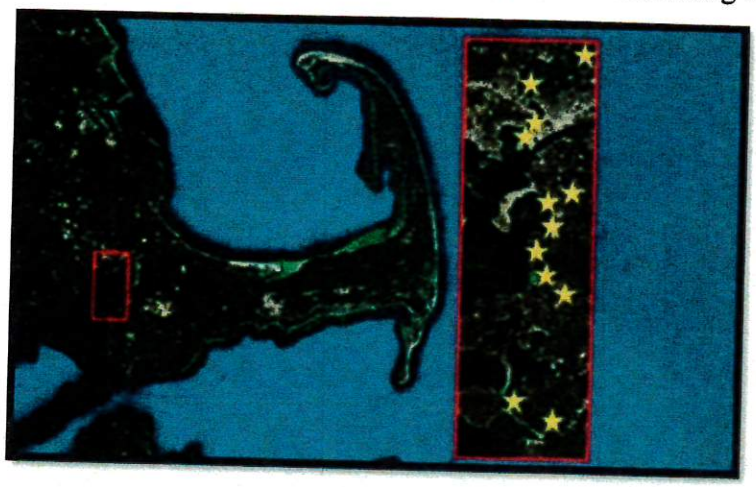

Figure 10: Each start is one of the 12 locations managed throughout the Town of Bourne in 2017 and again in 2018 by Ward Aquafarms, for public propagation activities in collaboration with the Town Department of Natural Resources.

In May of 2017 800 bushels of contaminated quahogs were relayed from the Tauton River to Phinney's Harbor, and the area was subsequently closed. Dr. Ward coordinated the planting of 82,000 overwintered ~2" oysters from Falmouth into a closed area in the Cohasset Narrows on June 23rd. Both of the Town upwellers were prepared to receive seed shellfish by switching out all mesh to 0.75mm, and painting all silos and troughs with Netminder, ecologically safe

antifouling coating. Received 2 shipments (167,000 from the County purchase, and 335,000 from Town of Bourne purchase) of quahog seed which were put into one of the upwellers at Monument Beach. Received 1 shipment of oysters in June, which were immediately put into the second upweller at Monument Beach. Received 1 shipment of soft shell clams in June, which were immediately put into two of the silos in the quahog upweller at Monument Beach. Both upwellers have been checked daily, all shellfish stirred daily, and graded and cleaned every 10-14 days.

Dr. Ward designed and assisted in building a grader from equipment at the shop at Town Hall to grade oysters on ½", 1" and 1.5" mesh. Then pulled all overwintered oysters from Cohasset Narrows, graded on the new grader, measured for total volume, average shell height and survival for each size grade. Then rebuilt all bags to be floating correctly for "flip-bag" culture, with half of the mesh out of the water at all times. Also re-rigged all bags with 1 meter ropes with two longline clips at either end for double anchor longline culture for greater stability at all sites. It was imperative that when deploying gear for the Town propagation activities that the gear was neat, clean, in orderly lines, and well maintained throughout the season (Fig. 10). It was also critically important to ensure all abutters approved all deployments, and therefore determining best practices and collaborating with local stakeholders was of the utmost importance. Then filled either 9 mm or 18 mm bags with 3 liters of oysters per bag and deployed at Cohasset Narrows with dual-longlines for each set of gear. Pulled all overwintered oysters from Pocasset River, graded on the new grader, measured for total volume, average shell height and survival for each size grade. Then rebuilt all bags to be floating correctly for "flip-bag" culture, with half of the mesh out of the water at all times. Also re-rigged all bags with 1 meter ropes with two longline clips at either end for double anchor longline culture for greater stability at all sites (Fig. 11). Made a new path, and designated a new area for farming at the Pocasset River which is easier to access, safer for tending and accessible at all tides. Then filled either 9 mm or 18 mm bags with 3 liters of oysters per bag and deployed at new Pocasset River location with dual-longlines for each set of gear. Temperature loggers (Onset Computer Corp., Bourne, MA) were deployed on the new lines at both locations. All of the shellfish in bags are checked twice per week and flipped for biofouling control weekly.

Figure 11 : 300 floating bags using the "flip-bag" technique in the Pocasset River, Bourne, MA. The orderly line setup and maintenance was critical to ensure abutters and local stakeholders were supportive of the project.

Research and method optimization

Ward Aquafarms has led numerous research projects both on the commercial farm, on collaborating farms, and throughout the New England region. The abstracts below are a subset of relavent recent projects.

Evaluation of bay scallop nursery optimization and effective growout strategies
December 1, 2016 – November 31, 2018

Given site-specific differences in wave action, food availability, salinity, temperature, etc., it is of the greatest importance to evaluate culture gear and techniques on as many varied aquaculture environments as possible. For this project we have partnered with 3 other commercial farms (as well as Ward Aquafarms) in order to document bay scallop growth and survival in environments which approximate many of the different growing areas throughout the United States. All of the farms primarily produce the eastern oyster, though some of the farms produce hard clams (*Mercenaria mercenaria*) as well. East Harbor Oyster Co. (Truro, MA) is a deep-water (15-30') oceanic site in Cape Cod bay, Massachusetts. This site is full salinity ocean water, is exposed to wave action to the north and northeast, and has little nutrient loading and therefore may have lower food availability as compared to other sites. Wash-Ashore Oyster Ranch LLC (Wellfleet, MA) is primarily an intertidal site, with the northern edge remaining submerged at all times, which sporadically receives wild bay scallop sets. The water is almost full oceanic salinity, though the area receives adequate freshwater inputs and therefore, high food availability. The farm is exposed to the west and north; though wave action is reduced as compared to the deep-water sites. Sippewissett Oyster Farm (Woods Hole, MA) is also a deep-water site (15-30'), with little freshwater input, and therefore little nutrient loading. The farm is exposed to the west and south, and has high wave action throughout the winter. The water at Sippewissett Oyster Farm approaches full oceanic salinity, and as the farm is situated in Buzzards Bay, the water gets warmer in the summer months as compared to the two previously mentioned farms in Cape Cod bay. Ward Aquafarms (North Falmouth, MA), is an intermediate salinity site with ample freshwater input, and therefore seasonally high food resources. The water gets very warm (25C+) in the warmer months at the shallow end of the farm (8' MLW) and the area becomes thermally stratified in the summer, remaining cooler in the deeper areas of the farm (25' MLW). The site at Ward Aquafarms is exposed to the south and west, and will often see significant wave action in the summer, and lower wave action throughout the winter months. By testing culture methods at the four partner farms, the salinity, wave action, water temperature, food availability and dissolved oxygen

Impacts of harmful algal blooms on shellfish aquaculture and sustainable mitigation strategies
December 1, 2014 – November 31, 2016

Expansion of US aquaculture will result in promotion of a healthy, nutritious, sustainable food source for a growing global population. Shellfish aquaculture in particular, has seen strong growth in recent years due to standardized culture techniques, reliable seed sources, and strong stakeholder support due to the environmentally benign nature of shellfish farming. Bivalve aquaculturists throughout southern New England however, have been confronted with a devastating harmful algae problem due to the dinoflagellate *Cochlodinium polykrikoides*. This harmful algal bloom (HAB) species was not detected anywhere in the region prior to 2005, though the now annual blooms have caused widespread and remarkable biological and economic losses throughout the shellfish aquaculture industry. Even though farmers have noted losses which restrict economic viability and growth in the industry, the rapid emergence of the HAB

species in the region has meant no comprehensive monitoring program, and very little research on the effects on commercially important cultured species. The proposed project will expand upon agricultural knowledge of impacts of *Cochlodinium polykrikoides* on species cultured in New England, while investigating potential mitigation strategies. It is imperative that sustainable mitigation strategies are both investigated and implemented as the ecosystem continues to change in order to continue to provide healthy, nutritious seafood to consumers throughout the US.

Sugar kelp and triploid oyster production to promote sustainable integrated multi-trophic aquaculture
May 1, 2013 – April 30, 2014

In this project we added sugar kelp (*Laminaria saccharina*) culture to our existing oyster farm to 1) take advantage of the known culture technique, 2) utilize an established market with great demand for this product, and 3) collaborate with other farmers in northern New England culturing the macroalgae who are very willing to assist in establishing new farms. We also investigated the advantages of growing triploid oysters (*Crassostrea virginica*) concurrent with the sugar kelp to increase yield and improve growth year-round, while bringing a consistent product to market. By incorporating sugar kelp and triploid oysters to the existing farm we increased economic viability, while diversifying risk and increasing nitrogen removal from the ecosystem. At the conclusion of this project, the results were disseminated through conference presentations and workshops to other farmers in the region, so that others can build upon what is learned to increase revenue and expand aquaculture production throughout New England.

Part I ADMINISTRATION OF THE GOVERNMENT

Title XIX AGRICULTURE AND CONSERVATION

Chapter 130 MARINE FISH AND FISHERIES

Section 57 SHELLFISH AQUACULTURE LICENSES

Section 57. The city council or mayor of any city, or the selectmen of any town, may upon written application, accompanied by plans sufficient to show the intended project and project area to be licensed, and after public notice and hearing pursuant to section sixty, grant to any person a shellfish aquaculture license.

Said license shall authorize said licensee in such city or town at all times of the year, in, upon, or from a specific portion of coastal waters of the commonwealth, of tidal flats or land under coastal waters: (1) to plant and grow shellfish, bottom/off bottom culture; (2) to place shellfish in or under protective devices affixed directly to the tidal flats or land under coastal waters, such as boxes, trays, pens, bags, or nets; (3) to harvest and take legal shellfish; (4) to plant cultch for the purpose of catching shellfish seed; and (5) to grow shellfish by means of racks, rafts or floats.

After receipt of a written application by the city council or selectmen, and after the notice and public hearing requirements of this section are satisfied and the licensing authority approves the application, the director shall, after inspection of the intended project area, certify that issuance of a shellfish aquaculture license and operation thereunder will cause no substantial adverse effect on the shellfish or other natural resources of the city or town. Upon such certification by the director, the city council or selectmen may issue the license, provided, however, that no license shall be issued for any areas then or within two years prior thereto, closed for municipal cultivation under the provisions of section fifty-four. Failure of the director to so certify shall be deemed a denial of the shellfish aquaculture license. The director's certification or refusal to certify shall be reviewable in accordance with section fourteen of chapter thirty A.

Licenses under this section shall be granted or denied in writing within sixty days after receipt of the written application and shall be issued upon forms supplied by such cities and towns and upon such terms and conditions and subject to such terms, conditions or regulations as the city council or selectmen issuing the same shall deem proper, but not so as to impair the private rights of any person or to materially obstruct navigable waters, and said license shall describe by metes and bounds the waters, flats or creeks covered thereby. Shellfish aquaculture licenses pursuant to this section shall be subject to any rules and regulations promulgated by the director, including those concerning the use and scope of

predator controls in the intertidal zone, and said licenses may be further conditioned by the director as he deems necessary and appropriate, including species to be propagated and the source and movement of seed shellfish.

Said license shall be for a period of not more than ten years and may be renewed for similar periods. Said license may be revoked by the city council, selectmen 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. Said licensee shall have the right to the exclusive use of the lands and waters for the purposes of growing shellfish thereon, and the licensee shall plainly mark the boundaries of said area. The selectmen or city council shall permit, as a condition of the license, such public uses of said waters and lands as are compatible with the aquacultural enterprise.

Whoever without the consent of the licensee, unless otherwise permitted by the terms and conditions of said license: (1) takes shellfish from the licensed lands or waters or from said racks, rafts or floats; (2) disturbs the licensed area or the growth of the shellfish thereon in any way; (3) discharges any substance which may directly or indirectly injure the shellfish; (4) willfully injures, defaces, destroys, removes or trespasses upon said racks, rafts, or floats; or (5) willfully injures, defaces, destroys, removes or trespasses upon said protective devices affixed directly to the tidal flats, such as boxes, trays, pens, bags, or nets shall be liable in tort for treble damages and costs to the licensee injured by such act.

Nothing in this section shall be deemed to affect the validity, conditions, or terms of any license granted under the corresponding provisions of earlier laws and in full force upon the effective date of this section. Nothing in this section shall excuse the licensee from complying with other laws of the commonwealth, including environmental laws and laws concerning interference with navigation.

Said shellfish aquaculture license may be transferred pursuant to section fifty-eight and all rights and privileges enjoyed by the licensee shall be assumed by the transferee.

Any license issued under the provisions of this section shall, upon the death of the licensee, continue in full force and effect, subject to the same terms, conditions, and regulations imposed upon the original license, for the balance of the unexpired term, or one year whichever is longer, for the use of the members of the immediate family of the deceased licensee. For the purposes of this section, immediate family shall mean the spouse, son, daughter, mother, father, brother and sister of said deceased licensee.

Nothing in this section shall be deemed to affect the validity, conditions, or term of any license granted under corresponding provisions of earlier laws and in full force upon the effective date of this section.

Part I ADMINISTRATION OF THE GOVERNMENT

Title XIX AGRICULTURE AND CONSERVATION

Chapter 130 MARINE FISH AND FISHERIES

Section 60 HEARING ON ISSUANCE OF LICENSE; NOTICE; PUBLICATION

Section 60. No license referred to in section fifty-seven shall be granted, transferred or renewed until after a public hearing, due notice of which has been posted in three or more public places, and published in a newspaper, if any, published in the city or town where the territory described in the application is situated at least ten days before the time fixed for the hearing, stating the name and residence of the applicant or transferee, as the case may be, the date of the filing of the application for such license, transfer or renewal, and the location, area and description of said territory.