North Carolina Shellfish Lease Application: Checklist

The entire application must be completed accurately and legibly. Double check that all items on this list are correctly addressed to avoid any delays to your application process. If there is missing or illegible information, your application will be **denied**

APPLICATION MUST BE COMPLETED IN BLACK OR BLUE INK

Section 1 & 2: Primary Applicant Information:

- ☐ Complete applicant/business agent and co-applicant information (if applicable)
- ☐ Businesses - complete Section 2
- ☐ Address must include a physical address AND a mailing address
- ☐ Photocopy of your North Carolina Driver's License

Section 3: Applicant Qualifications

- ☐ Complete to provide qualifying information

Section 4: Shellfish Lease Site Information:

- ☐ Application fee made out to DMF (Do not submit a rent payment with your application)
- ☐ Ensure that your coordinates are in decimal degree format (i.e., 35.12345678° (N), -76.12345678° (W))
- ☐ Confirm that your listed coordinates reflect the coordinates on your maps

Section 5: Shellfish Lease Management Plan:

- ☐ Complete this section as thoroughly as possible. Improper completion of this section will delay your application or result in its denial
- ☐ **Complete storm preparedness plan completely. If you have any questions, please contact Lease Program staff for assistance**

Section 6: Shellfish Lease Cleanup Provisions:

- ☐ Sign that you acknowledge Shellfish Lease Cleanup Provisions

Section 7: Site Diagrams:

- ☐ Location Map
- ☐ Top ViewDiagram
- ☐ Side View Diagram

Section 8: Final Signature:

- ☐ Read over and sign application and have notarized

Appendix I: Shellfish Lease Application Process

- ☐ Read over and ensure you are familiar with the application process

Appendix II: Shellfish Lease Siting Requirements and Restrictions

- ☐ Read over and ensure you are familiar with all the shellfish lease siting requirements and restrictions

Appendix III: Shellfish Lease Management Plan Information and Technical Assistance

- ☐ Read over and ensure you are familiar with the Shellfish Lease Management Plan requirements

Appendix IV: Shellfish Lease Production Requirements (as of 2019)

- ☐ Read over and ensure you are familiar with the production requirements

Appendix V: Public Health Information:

- ☐ Read over Public Health Information - Time to temperature harvest and handling restrictions are implemented that could impact your business planning. Please be sure to be familiar with the most recent Shellfish Sanitation proclamations (SS-1 and SS-2) (http://portal.ncdenr.org/web/mf/proclamations-current#shellfish-san) that include important information on public health restrictions including re-submergence. If you have questions regarding Vibrio plans or harvest restrictions, please contact the Shellfish Sanitation and Recreational Water Quality Section. You are responsible for knowing and understanding all public health restrictions for your shellfish lease.

Appendix VI: Aquaculture Permits

- ☐ Read over and ensure you are familiar with the aquaculture permits required for your proposed activities

Appendix VII: Consent Form from Riparian Property Owners/Submerged Land Claims:

- ☐ Shellfish lease boundaries within **250 feet** of a developed shoreline must fill out and have this form signed and notarized
- ☐ Shellfish leases on existing Submerged Land Claim need the rightful heirs' notarized permission.

Appendix VIII: Storm Preparedness and Gear Management Plan Information:

- ☐ Read all information about storm preparedness and gear management
- ☐ Use template to complete the storm management plan in Section 5

- ☐ Mail application with **nonrefundable and nontransferable** application filing fee by August 1, 2022, to:

NC Division of Marine Fisheries
Attention: Shellfish Lease and Aquaculture Program
PO Box 769
Morehead City, NC 28557-0769

North Carolina Shellfish Lease Application

Section 1: Primary Applicant Information
(If applying as a business, list business agent information in this section)

First Name	MI	Last Name	Suffix

Mailing Address	PO Box	City	State	Zip

Physical Address	PO Box	City	State	Zip

Day Phone: Alt Phone:

Email Address: ☐ Check to opt-in for email receipt of all paperwork

Race: Height: Weight:

Gender: ☐ Male ☐ Female Eye Color: Hair Color:

Have you been a legal resident of the state of North Carolina for at least 6 months? ☐ No ☐ Yes

Check One: Driver's License ☐ State I.D. ☐ Military I.D. No. ☐ Resident Alien I.D. No. ☐ Passport No. ☐

Number: Expiration Date:

Are you related by blood or marriage to any person now working for DMF? ☐ No ☐ Yes*
*(Name and Relationship: _____)

Do you hold a Standard Commercial Fishing License? ☐ No ☐ Yes (SCFL #):

Do you currently own a vessel with current registration? ☐ No ☐ Yes (Vessel ID#):

Do you have four or more convictions of DMF fisheries violations in the past three years? ☐ No ☐ Yes*
** If Yes, you will not be approved for permits to work a shellfish lease, other than cultch on bottom*

Do you, anyone in your household, or business you are a part of, currently have or hold any other shellfish leases or subleases? ☐ No ☐ Yes*
*If Yes, list the lease numbers of leases you are associated with:

_____

[G.S. 113-202 (c): no person, family or business may hold more than 50 acres of leased public bottom]

Co-Applicant Information (if applicable)					
First Name	MI	Last Name			Suffix
Mailing Address		PO Box	City	State	Zip
Physical Address		PO Box	City	State	Zip
Day Phone:		Alt Phone:			
Email Address:			☐ Check to opt-in for email receipt of all paperwork		
Check One: Driver's License ☐	State I.D. ☐	Number:		Expiration Date:	
Are you related by blood or marriage to any person now working for DMF? ☐ No ☐ Yes* *(Name and Relationship): _____					
Do you hold a Standard Commercial Fishing License? ☐ No ☐ Yes (SCFL #):					
Do you currently own a vessel with current registration? ☐ No ☐ Yes (Vessel ID#):					
Do you have four or more convictions of DMF fisheries violations in the past three years? ☐ No ☐ Yes* **If Yes you will not be approved for permits to work a shellfish lease other than cultch on bottom*					
Do you currently have or hold an interest in any other shellfish leases? ☐ No ☐ Yes* *If Yes, list the lease numbers of leases you are associated with: _____ [G.S. 113-202 (c): no person or business may hold more than 50 acres of leased public bottom]					

Section 2: Business Information (if applicable)				
Business Name:				
Type of Business Entity: ☐Corporation (Please attach copy of current articles of incorporation and list of corporate officers) ☐Partnership (Please attach a current copy of your partnership agreement) ☐Sole Proprietorship ☐LLC				
Business Mailing Address	PO Box	City	ST	Zip
Business Physical Address	PO Box	City	ST	Zip
Day Phone:	Alt Phone:			
Email Address:	☐ Check to opt-in for email receipt of all paperwork			

Section 3: Applicant Qualifications

Describe your capability to conduct the proposed aquaculture activities (including training, experience, and education that you have obtained or will obtain):

Section 4: Shellfish Lease Site Information

Check the box(es) you are applying for (The designated, **nonrefundable or nontransferable,** application fee must accompany each application.):

☐ Bottom Shellfish Lease ($200.00): A bottom lease primarily uses cultch, or low-profile structures to cultivate shellfish. Cages and gear are limited to a maximum height of 18" above the bottom. Rent: $10/acre per year.
First rent payment will be due upon receipt of a contract to be signed.

☐ Water Column Shellfish Lease/Amendment ($100.00): A water column lease amends all or part of an existing bottom lease footprint. Floating bags, cages greater than 18" above the bottom or any other use of the water column will require this type of lease. Rent: $100/acre per year.
First rent payment will be due upon receipt of a contract to be signed

Shellfish Lease County:	Closest Town:	Waterbody:
Estimated acreage:		

Note: Acreage allowed must be consistent with the Shellfish Lease Management Plan, prior lease production history, public trust use of the area, etc. ***Single lease acreage is limited to between 0.5 and 10 acres.*** If you currently hold more than 5 acres of leases, they must meet production before a new application may be accepted.

Does the shellfish lease site contain known sea grasses or Submerged Aquatic Vegetation (SAV)?
☐ No ☐ Yes (*Leases are prohibited on sites with greater than 15% seabed cover of SAV)*

Approximate closest distance to existing shellfish bed or oyster rock? _____ft.
Shellfish leases may not be located on or within 10 ft. of existing natural shellfish beds (>10 bushels of shellfish/ acre).

Approximate minimum distance of proposed shellfish lease from shoreline? _____ft.

Does the applicant or co-applicant own all the shoreline adjacent to the proposed shellfish lease?
☐ No ☐ Yes
*Shellfish leases must be at least **250** feet from a developed shoreline unless a) the applicant or co-applicant are the sole riparian owner, or b) a signed and notarized riparian owner consent form has been completed and attached (Appendix VII)*

Approximate distance from the closest existing shellfish lease? _____ ft.
*Shellfish leases must be at least **250** feet from any existing or proposed shellfish leases.*

Approximate minimum distance of proposed lease from vegetated marsh? _____ft.
*Shellfish leases must be at least **20** feet from vegetated marsh if gear is proposed in the management plan.*

Approximate distance to marked or unmarked navigational channel? _____ft.
Shellfish leases cannot block marked or unmarked navigation channels

Please list the coordinates for the proposed shellfish lease. The minimum number of coordinates required is three and the maximum is eight. A survey is not required by law but is suggested as a best management practice. Any costs of a survey are the responsibility of the lease holder. The shellfish lease site must be as compact as possible. **Please use decimal degrees (ex: 34.72334896º (N), -76.75634128º (W))**
Corner Coordinates:

N	W	[redacted]	N	W
N	W		N	W
N	W		N	W
N	W		N	W

Section 5: Shellfish Lease Management Plan

Shellfish species to be grown: ☐ Diploid Oysters ☐ Triploid Oysters ☐ Hardshell Clam
☐ Bay Scallops ☐ Other: _____

Capital Investment: Year 1: $ Year 2-10: $

Vessel Available: Vessel: ☐ No ☐ Yes Length: ___ Power: _____ Trailered? ☐ No ☐ Yes

If other vessels will be used, please list here:

Types of harvest gears will you use:

Will you require the use of mechanical harvest gear (dredge, power rake, etc.)? ☐ No ☐ Yes
Mechanical gears are not allowed on shellfish leases located in Primary Nursery Areas

Shellfish Grow-out Method: Please check the grow-out method(s) you propose to use on your shellfish lease and the estimated amount of equipment and effort.

- *Poles or pilings over 4 inches require a permit from DCM, which applicant is responsible for obtaining*
- *Floating Upweller Systems (FLUPSYs) are not permitted on shellfish lease sites*

Bottom Methods	**Year 1**	**Years 2-10**
☐ Cultch on-bottom	Bushels/Acre	Bushels/Acre
☐ Clam seed	Spat/Seed/Acre	Spat/Seed/Acre
☐ Predator netting/screens	# Units	# Units
☐ Rack and bag system <18”	Racks/ Bags _____/_____	Racks/ Bags _____/_____
☐ Cage system <18”	# Cages	# Cages
☐ Tray culture <18”	# Trays	# Trays
Water Column Methods	**Year 1**	**Years 2-10**
☐ Floating bags (*Taylor float™, mesh bags, flip bags, etc.)*	# Floating Bags	# Floating Bags
☐ Floating cages (*Oyster Gro™, etc.)*	# Floating Cages	# Floating Cages
☐ Suspended system, long line	# Units	# Units
☐ Rack and bag system >18”	Racks/ Bags _____/_____	Racks/ Bags _____/_____
☐ Bottom Cage system >18”	# Cages	# Cages
☐ Type of Anchor used *(screw anchors, rods, etc.)*	# Anchors	# Anchors

Grow out methods will be specific to the contract. If you plan on changing methods, you must notify DMF for prior approval, and complete another Shellfish Lease Management Plan.

Do you plan to participate in the following DMF permit relay activities?

☐ Polluted Area Relay ☐ Seed Oyster Management Area Relay

In-state hatchery: ☐ No ☐ Yes	Hatchery Name:
	Hatchery Phone:
Out of state hatchery ☐ No ☐ Yes*	Hatchery Name:
* Requires an Introduction Permit (Appendix VI)	Address:
	City, State Zip:
	Hatchery Phone:

Do you plan to harvest oysters anytime during April – September? ☐ No ☐ Yes*
*Closed oyster season harvest requires a Closed Oyster Harvest Certification.

Will you operate as a Shellfish Dealer? ☐ No ☐ Yes*
*Shellfish Dealers must have a certification from Shellfish Sanitation (252) 726-6827, and a DMF Dealer License to operate.

Do you plan to move shellfish from your shellfish lease to another lease prior to harvest? ☐ No ☐ Yes*
Do you plan to conduct pre-harvest activities (such as culling) off-site of your lease? ☐ No ☐ Yes*
*A Commercial Fishing Vessel Registration will be required annually for boats used to harvest or transport seafood. The registration is separate from the NC Wildlife Resource Commission's registration.

Shellfish Lease Marking

Shellfish lease corners must be marked and with proper durable signage attached including all lease numbers, reflective tape, and the name of the leaseholder. Water column leases must also have yellow floats marking each corner. Boundary markers should be every 50 - 150 feet.

Type and number of markers to be used:

☐ Wood post (3-4 inch): size- _____, number- _____
☐ Plastic/PVC: diameter- _____, number- _____
☐ Other (composition, size, quantity):_____

-Posts greater than 4"x4" or 4" in diameter require a permit from DCM
-DMF has no duty to protect any shellfish lease or franchise that is not properly marked

Land/Dock Based Facilities: (check all that apply) and indicate if these are shellfish lease or land based. *NOTE: These structures, if proposed, may require a permit from DCM*

☐ Dock _____
☐ Floating upweller (may not be located within the shellfish lease)
☐ Tank upweller or downweller _____
☐ Pumps_____
☐ Raceway/trays_____
☐ Graders/sorters_____
☐ Tumblers_____
☐ Storage facilities, sheds, etc._____

Other (specify):

If you propose floating gear or intertidal gear, describe the mitigation or deterrent measures you will take to minimize the potential pollution impact of birds and/or mammal waste. Please be as specific and detailed as possible. **This section must be completed, or your application will be denied.**

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

All shellfish lease applications for 2022 must be accompanied by a storm preparedness and gear debris management plan. Please use the space below to describe your plan (or attach your plan to the end of the application), using the template outlined in Appendix VIII.

Section 6: Shellfish Lease Cleanup Provisions

Shellfish Lease Cleanup Provisions:

If your shellfish lease is surrendered, cancelled, terminated for lack of production or failure to pay rent, or you simply choose to relinquish the lease, the leaseholder is responsible for removing all markers, posts, and aquaculture gear except planted cultch. **You will be given a 30-day notice to remove all posts, markers, and aquaculture gear and must notify DMF after gear has been removed.** If you do not remove the markers, posts, and gear after the 30-day notification, DMF may pursue legal action to have it removed at your cost. These provisions will be included in the lease contract.

The leaseholder is also responsible for collecting any gear that is displaced due to storm events. It is highly recommended that all shellfish lease equipment is labeled with your contact information to facilitate collection in case of storm loss.

By signing I agree that I have read and understand the Shellfish Lease Cleanup Provisions.

Signature:	Date:

Section 7: Proposed Shellfish Lease Site Diagrams

On the following pages, or separate pieces of 8 ½ x 11 paper, please provide accurate drawings or maps showing the following three diagrams:

1. **LOCATION MAP**: Map must show North arrow; proximity to identifiable markers or landmarks, corner markers of the shellfish lease, and water body width in relation to the lease. The base map may not be hand drawn; however, your proposed lease location may be hand drawn. Consider using screenshots of Google Earth, the DMF Shellfish Leasing Tool, or NOAA online navigational charts. Must show approximate distance to shoreline.

2. **TOP VIEW DIAGRAM**: Must show North arrow; indicate shellfish lease corners with approximate boundary distance measurements; proposed configuration and alignment of any aquaculture gear such as floating cages or bottom cages. **This diagram may be hand drawn in black or blue ink, or made on a computer and printed.**

3. **SIDE VIEW DIAGRAM**: Must indicate minimum and maximum water depth at mean low water; maximum height in inches of any bottom structure including shell, cages, rack and bags; clearance in feet above such structures at the shallowest and deepest part of the lease at mean low water. **This must be drawn in black or blue ink or made on a computer and printed.**

Diagrams and maps do not have to be drawn to scale but must be clear and easy to understand. Maps that are incomplete will delay the application process or result in a denied application. **Any modifications made to the original maps or diagrams will require the applicant to resubmit diagrams.** These are submitted to the Army Corps as part of the joint process to issue a Prior Construction Notice (PCN)

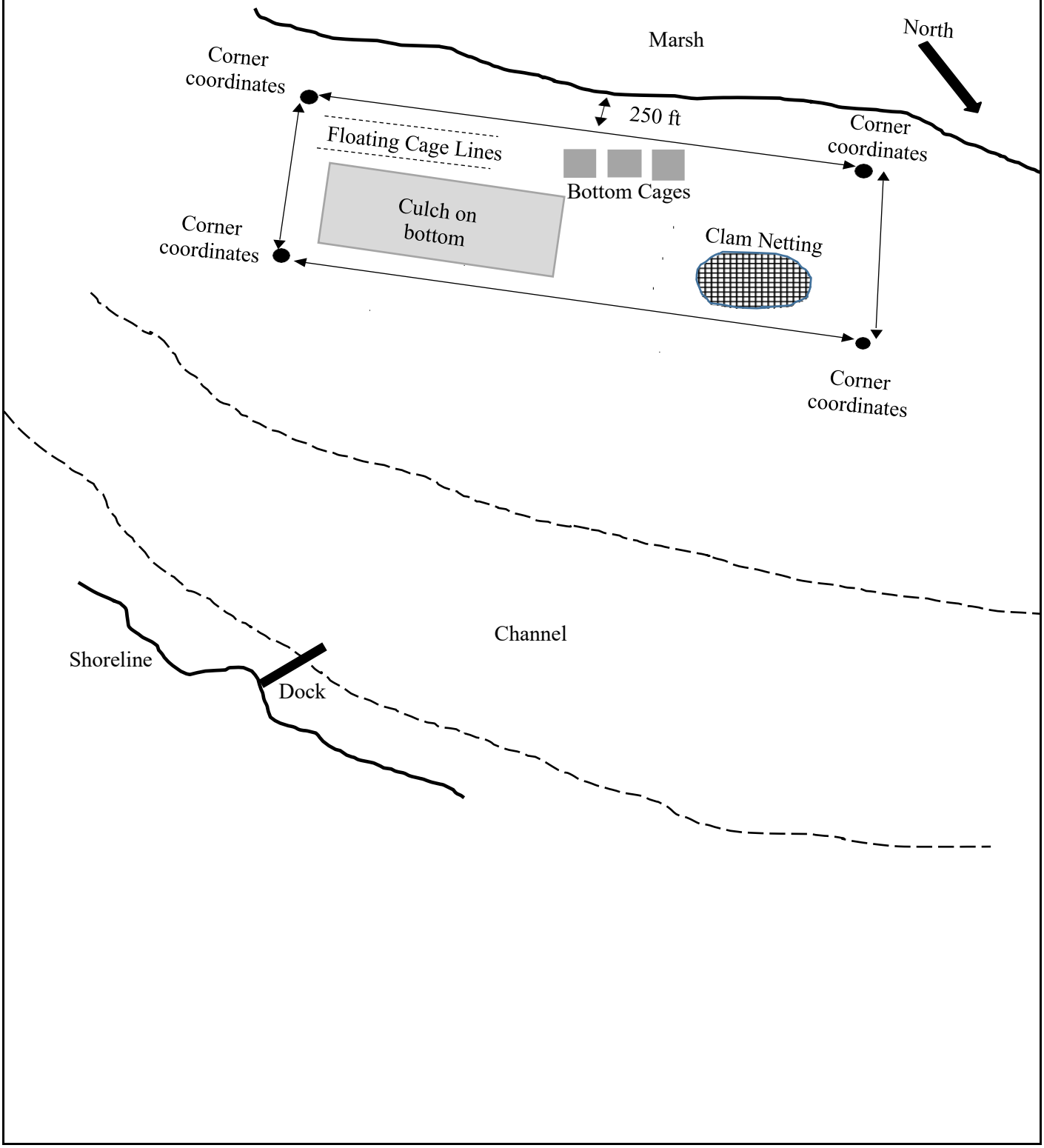
Location Map
(Insert on a separate piece of paper)

Example Shellfish Lease Site Location Map using Google Earth:

Top View Diagram

(Insert on a separate sheet of paper- NO PENCIL)

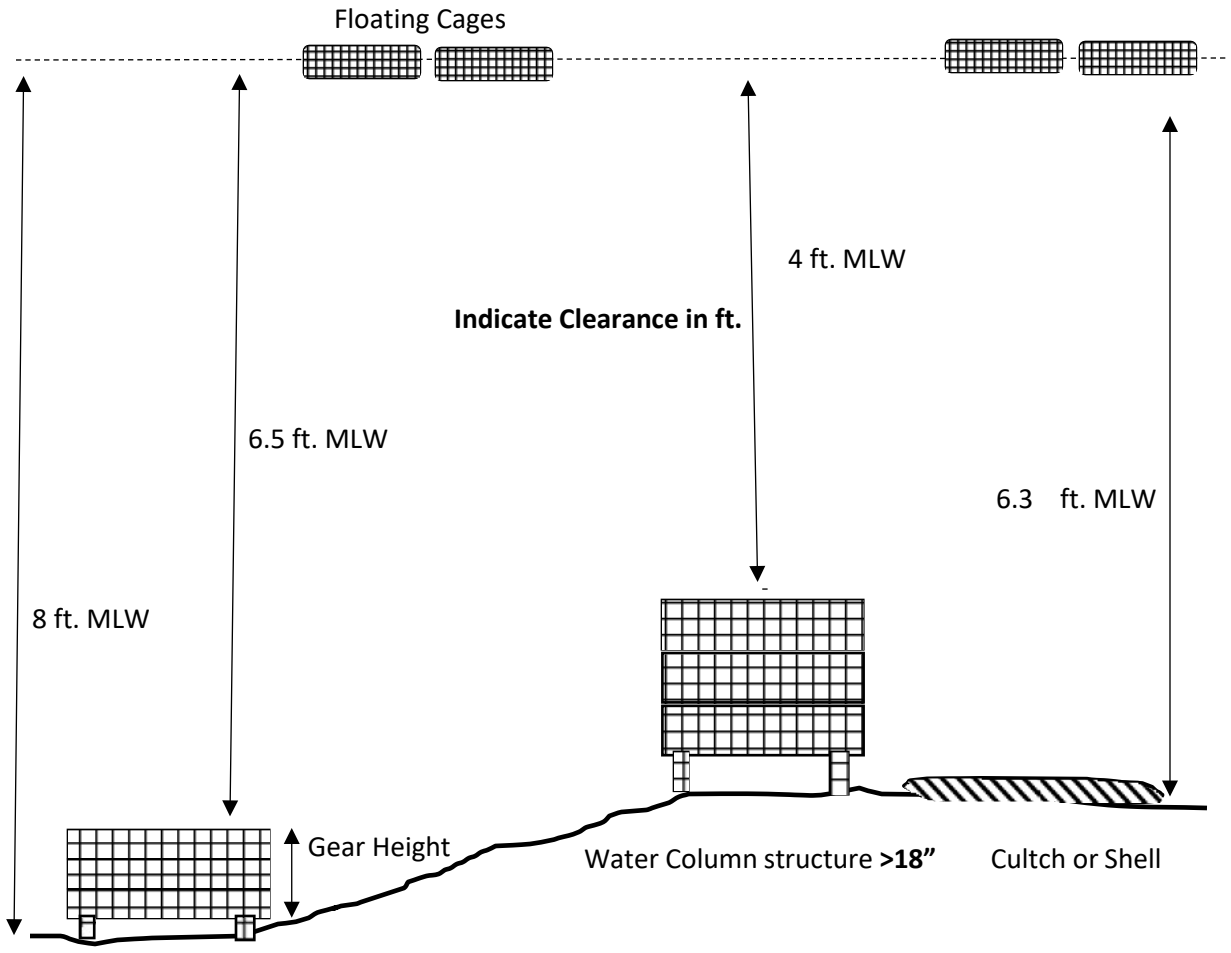
Example Top View Diagram:



Side View Diagram

(Insert on a separate sheet of paper- NO PENCIL)

Example Side View Diagram:



Applicant Initials _____

Section 8: Final Signature

By signing below, the Applicant hereby states that the information included in the application is true and correct, and that the Applicant(s) understand the following:

1. The Applicant will accept the shellfish lease and is subject to all the provisions of the North Carolina Marine Fisheries Commission Rules and applicable General Statutes.
2. The annual shellfish lease rental fee shall be $10.00 per acre for bottom leases and $100.00 per acre for water column leases. Shellfish lease rent is prorated for the first year and is due prior to the issuance of the lease contract. Annual rent shall be paid a year in advance on or before July 1st. Unpaid or delinquent rent will result in the termination of the lease.
3. The applicant agrees to use the shellfish lease for commercial production of shellfish and shall provide annual production reports as required by DMF. Failure to meet production requirements may result in the termination of the lease.
4. The applicant agrees that if the application is approved for public comment and hearing, to provide evidence that they attempted to notify by certified mail the adjacent riparian property owners within 250 feet from where the proposed shellfish lease is located. The notice shall instruct riparian property owners to provide any comments on the proposed shellfish lease in writing to DMF within 30 calendar days of the date the notice was sent and indicate that no response shall be interpreted as no comment.

Applicant/Business Agent: _____ Date: _____

Co-Applicant: _____ Date: _____

SWORN to and subscribed before me

This the _____ day of _____, 20 ___

_____
NOTARY PUBLIC

My Commission Expires: _____

(Seal)

Appendix I: Shellfish Lease Application Process

1. Select a shellfish lease site.
    a. Use the *DMF Shellfish Lease Tool* (http://portal.ncdenr.org/web/mf/shellfish-lease-franchise-programs) and/or the *UNCW Shellfish Benthic Siting Tool* (https://uncw.edu/benthic/sitingtool/). These tools show you other leases, as well as pertinent regulations for each area.
    b. Visit the location. Make sure it is suitable for growing and meets the minimum requirements set by DMF.
    c. Talk to your neighbors. This includes riparian landowners, or other local growers. This can help you learn valuable information about your proposed location, as well as build relationships with the folks you will be interacting with in the future.
    d. Talk to DMF Leasing Staff - they can help you with this part of the process and answer any questions you may have.
2. Complete the application. **All pages must be completely filled out, and initialed, indicating that you have read and understand all the information included in the application.** Submit to DMF with your nonrefundable or transferable application fee.
3. Once your application is received, the fee is processed. The application is checked to ensure it is complete and an initial verification using GIS is completed to endure the lease does not occur in historical SAV or infringe upon other property interests.
4. If the application is incomplete, illegible, or the proposed lease is not in a permissible area, the application is denied.
5. Temporary lease signs are mailed to the applicant with a letter requesting the proposed site be marked on each corner. These signs will remain throughout the lease application process.
6. Lease applicant emails pictures of the installed temporary signs to Lease Program Staff. **Staff will not proceed with a site investigation until this occurs.**
7. Lease Program staff investigate your proposed site. This investigation includes determining criteria for marsh setback, channel locations, percentage of water body the proposed site occupies, shellfish presence/density and SAV presence/density.
8. Site investigation data is compiled into a report by a biologist.
9. The proposed site map including the investigation report is sent out for review to internal staff and DEQ agencies.
10. Internal comments are reported to the DMF director. At this point the director can recommend:
    a. The application be taken to public hearing as submitted,
    b. The site or application be conditioned or modified prior to going to public hearing,
    c. The application be denied.
11. If the application is approved for public hearing, DMF staff will attempt to notify adjacent riparian property owners within 250 feet from where the proposed shellfish lease is located by certified mail. The notice shall instruct riparian property owners to provide any comments on the proposed shellfish lease in writing to DMF within 30 calendar days of the date the notice was sent and indicate that no response shall be interpreted as no comment. By law, DMF must run two public notices in a local newspaper. DMF also issues a press release and notifies DMF proclamation lists of the proposed site. At the end of the public comment period, a public hearing is scheduled in the county where the proposed lease is located. All comments received must either be in writing or submitted verbally or in writing at the public hearing.

12. Public hearing comments are summarized in a report to the director for consideration. The director then does one of the following:
    a. Approves the shellfish lease as submitted or as modified in #8,
    b. Approves the lease with conditions,
    c. Denies the lease.
13. Once the lease is approved, the Lease Program will draw up a contract for the lease site. DMF staff will verify corner markers and applicant installs permanent markers and signage as required. The contract will be mailed to the lease applicant with instructions. The first year's rent is due in advance.
14. The lease applicant reads the lease contract and signs and dates with a notarized signature, indicating agreement with the lease contract terms. The applicant mails the signed contract back to DMF with the appropriate lease rent.
15. Applicant installs permanent signs on their lease and submits photos to DMF
16. The lease rent is processed and the DMF director signs the contract which a copy is mailed back to the leaseholder.

Appendix II: Shellfish Lease Siting Requirements and Restrictions

It is the responsibility of the applicant to site the lease. Shellfish leases are a special use of public trust submerged land and waters that allow individuals to grow shellfish for commercial production only. To protect access to public trust resources, the DMF Director is given broad authority to ensure that leases are granted in areas that will be compatible with the lawful utilization of marine and estuarine resources**.**

The DMF Shellfish Lease Tool (http://portal.ncdenr.org/web/mf/shellfish-lease-franchise-programs) and/or the UNCW Shellfish Benthic Siting Tool (https://uncw.edu/benthic/sitingtool/) should be used to assist with lease siting.

Areas where leases cannot be sited:

☐ In areas unsuited to the species of shellfish or grow-out method you have selected.
☐ In areas closed by Shellfish Sanitation because of pollution.
☐ Within 10 feet a natural shellfish bed.
- By MFC rule, a natural shellfish bed is defined as 10 bushels of shellfish (oysters, clams, mussels) per acre.
- The US Army Corps of Engineers Nationwide (ACoE) Permit #48 sets strict limits for the placement of aquaculture sites near naturally occurring oyster reefs, oyster aggregations and shell bottom.

☐ On areas containing significant Submerged Aquatic Vegetation (SAV, i.e. sea grasses).
- The US Army Corps of Engineers Nationwide Permit #48 sets strict limits for the placement of aquaculture sites where the presence of SAV is greater than 15% coverage of the applied for site.

☐ Where the lease site extends more than one-third the distance across any water body (creek, bay, river, etc.); *except* where the aquaculture method only uses cultch-on-bottom, or clam-on-bottom methods. (ACoE NW Permit #48 condition)
☐ In areas incompatible with traditional uses such as, but not limited to: commercial or recreational fishing, swimming areas, navigational channels (marked and unmarked), areas designated as shellfish management areas and enhancement sites including cultch planted sites.
☐ In areas where leases are otherwise prohibited by law.
☐ Over recognized Submerged Land Claims without a completed signed and notarized permission form. For a map listing any recognized claims in your county link here: http://portal.ncdenr.org/web/mf/submerged-lands-maps

Shellfish leases must:

- ☐ Be as compact as possible and be compatible with the Shellfish Lease Management Plan
- ☐ Not impinge upon the rights of riparian property owners.
  - Within **250 feet** of a developed shoreline, you will need written and notarized consent of the riparian property owner.
  - The Division shall notify by certified mail the adjacent riparian property owners within 250 feet from where the proposed shellfish lease is located. The notice shall instruct riparian property owners to provide any comments on the proposed shellfish lease in writing to DMF within 30 calendar days of the date the notice was sent and indicate that no response shall be interpreted as no comment.
- ☐ May not be within **250 feet** of another existing or proposed shellfish lease (including ones you own)
- ☐ Not be sited within **20 feet of a vegetated marsh** to allow public access to the marsh or **5 feet where the aquaculture method only uses cultch-on-bottom**, or clam-on-bottom methods.
- ☐ Not exclude or attempt to exclude the public from allowable public trust use of navigable waters on shellfish leases and franchises including, but not limited to, fishing, hunting, swimming, wading and navigation.
  - Lease sites using bottom or floating cages must place them in parallel rows with at least 10 feet between each row to allow for navigation by the public. Rows may be configured in any direction.
- ☐ Be continuously marked with proper legible signage on all corner markers. All corner markers shall be marked with either reflective tape or reflectors.
- ☐ Not conduct development activities listed below without permitting by DCM.

**NOTE: DMF has no authority to permit the following structures on a lease. If you intend to use these structures, they will require a CAMA permit. For more information, contact DCM at (252) 808-2808.*

- Lease markers **greater than 4 inches X 4 inches or > 4 inches in diameter**
- Floating Upwelling Systems (FLUPSYs) not on lease site, tank downwellers, upwellers, raceways, etc.
- Docks, piers, bulkheads, or other development activities
- Permanently anchored barges or platforms
- Dredging or fill activities or utilities

Appendix III: Lease Management Plan Information and Technical Assistance

The Shellfish Lease Management Plan details what type of aquaculture operation you plan. This is an important step when planning your shellfish lease activities. When your shellfish lease is approved by the DMF director, the Shellfish Lease Management Plan will become a part of the legal lease contract by reference. Changes to grow-out methods, species, and navigational clearance will require submission of a modified management plan and approval by DMF.

Please use the following resources to help you develop your Lease Management Plan:

North Carolina Sea Grant: can provide valuable assistance in helping you determine capital investment, lease size, grow-out methods, seed sources, and many other important items that will help your aquaculture venture succeed (https://ncseagrant.ncsu.edu/aquaculture/).

Carteret Community College: offers an Aquaculture Technology certificate, as well as a degree. These classes provide technical knowledge about aquaculture, operating a business, and finance management (https://carteret.edu/programs/aquaculture-technology/).

NOAA: The data is available via NOAA's Marine Cadastre national mapper and viewer (https://marinecadastre.gov/nationalviewer/). The specific data are for Vessel Traffic density. Generalized summaries are available in the Marine Cadastre viewer (https://marinecadastre.gov/ais/). *Note this does not apply to personal watercraft.

The North Carolina Shellfish Growers Association: industry group that shellfish growers can join and network with other growers (http://www.ncshellfish.org/).

The East Coast Shellfish Growers Association: regional association that includes great information on shellfish aquaculture including Best Management Practices. They produce a newsletter with updates on legislation, scientific studies, and other pertinent information concerning shellfish growers (http://ecsga.org/).

Appendix IV: Shellfish Lease Production Requirements (as of 2019)

Shellfish leases in NC must meet production standards by rule. Failure to meet production standards is the number one reason for leases being terminated. Proper sizing of the lease and a sound management plan are key to meeting your production standards.

The following are the **minimum** Shellfish Lease Production Standards in statute:

Bottom and Franchise *Extensive* methods (no gear): Plant 15,000 seed/acre/year or harvest an average 20 bushels/acre (leaseholder *must* provide annual receipts of proof of purchase of seed)

Bottom *Intensive* methods (gear use): Plant 23,000 seed/acre/year or harvest an average 20 bushels/acre (leaseholder *must* provide annual receipts of proof of purchase of seed)

Water Column *Intensive* methods (gear use): Plant 23,000 seed/acre/year or harvest an average 50 bushels/acre (leaseholder *must* provide annual receipts of proof of purchase of seed)

Note: The Shellfish Lease Program uses the following conversion numbers that are in rule to determine bushels in planting and marketing. *These numbers apply to **all** sizes, seed to market size*:

Clams and Scallops:	1 bu. = 400 count
Oysters:	1 bu. = 300 count

Appendix V: Shellfish Sanitation/ Public Health Information

The following information is to provide awareness of the public health risks with shellfish as well as causes and impacts from temporary and permanent shellfish closures. An illness from your product or growing area closures can have a significant impact on your shellfish aquaculture business. We encourage applicants review and consider the permanent and temporary closure status where you site your lease and implement safe handling practices.

Because shellfish are filter feeders, they provide valuable water quality benefits by filtering up to 40 gallons of water per day. However, they can also concentrate potential pathogens (bacteria and viruses) that cause illness in consumers, particularly when shellfish are consumed raw or undercooked. The DMF Shellfish Sanitation and Recreational Water Quality Section continuously sample waters to ensure the shellfish harvest areas of the coast are properly classified. Classification maps showing permanent closure areas can be viewed at: http://portal.ncdenr.org/web/mf/shellfish- closure-maps

In addition to the permanent closures, heavy rainfall and the resultant runoff, or other events such as septic or sewage failures, chemical spills, etc. may cause temporary shellfish water closures. These events result in heavy pollutant loads washing into growing areas and may close growing areas for days to weeks depending upon the event. No shellfish harvest is allowed during this time. An interactive map of current temporary shellfish closures can be viewed at:
https://ncdenr.maps.arcgis.com/apps/webappviewer/index.html?id=5759aa19d7484a3b82a8e440fba643aa

Not all pathogenic bacteria are associated with polluted waters. The National Shellfish Sanitation Program (NSSP) Model Ordinance and the US Food and Drug Administration require safe harvest and handling practices to reduce illness caused by post-harvest growth of **Vibrio** bacteria. Two species of concern are *Vibrio vulnificus* and *Vibrio parahaemolyticus*.

Vibrio bacteria occur naturally in our warm coastal waters and multiply rapidly once shellfish are removed from the water and exposed to warm ambient air temperatures. To decrease the risk of Vibrio illnesses, which are rare in NC, Shellfish Sanitation and the DMF have developed Time to Temperature limits for harvesting oysters and clams. Lease holders harvesting oysters outside of the regular oyster season from shellfish leases must document time of harvest and follow restrictions set forth in DMF annual proclamations. Shellfish dealers must also document time to temperature for receiving, storage and shipping. Current (Shellfish Sanitation) proclamations specifying time to temperature controls can be viewed on the DMF website: http://portal.ncdenr.org/web/mf/proclamations-current#shellfish-san

In some instances, a portion or the entire lease may be closed when the surrounding growing area is later reclassified and permanently closed by reason of pollution. Staff from DMF Shellfish Sanitation and Resource Enhancement work closely to notify lease holders that are impacted by these reclassification closures so they can relay material off before the closure takes place. At this point, the lease may either be relinquished by the leaseholder or it will either be terminated for lack of production over time, or automatically expire at the end of the contract period and may not be renewed. No shellfish harvest is allowed once the permanent closure goes into effect.

Contact the Shellfish Sanitation & Recreational Water Quality Section for up-to-date information at (252) 726-6827.
Subscribe to DMF and/or Polluted Area proclamations at: http://portal.ncdenr.org/web/mf/email-subscribe

Appendix VI: Aquaculture Permits

Certain types of activities associated with shellfish aquaculture require additional permits. These permits provide leaseholders with tools to access public resources, produce and market shellfish while ensuring protection of public health, native species and habitats. Filling out your Lease Application completely will help DMF staff identify what permits you will need so we can bundle those with the application. Permits are available at no cost and it is unlawful to conduct these activities without the proper permit. For more detailed information, contact the Lease Program Staff at Shellfish.Lease.Permits@ncdenr.gov

Aquaculture Operation Permit (AOP)

An AOP is required for any lease/operation that meets the definition of aquaculture in MFC rules. If you are providing any technology not found in nature (feeding, predator protection, salinity or temperature control, etc.) you will need an AOP. All intensive culture methods will require an AOP. An AOP also gives you the ability to harvest product under the size limit for natural wild harvest stock if your product is properly identified with your AOP number. This is an annual permit expiring on December 31st.

Aquaculture Collection Permit (ACP)

This permit is rarely issued and is for collection of small numbers of organisms from state waters for aquaculture purposes, typically brood stock or breeding. You must have an AOP prior to applying for an ACP.

Aquaculture Seed Transplant Permit (ASTP)

This permit allows the transfer of seed from a permitted nursery or hatchery using waters that are classified as Restricted or Conditionally Approved Closed by Shellfish Sanitation. To be eligible for this permit, oysters must be 25 mm or less and clams must be 12.5 mm or less.

Introduction and Transfer Permit (Intro)

This permit allows introduction and transfer of organisms such as seed clams or oysters into North Carolina from another state. Only native shellfish species may be transferred for placement into state waters. The transfer of organisms is carefully monitored to ensure no unwanted shellfish diseases or pests are introduced into North Carolina waters. A pathological report on the lot to be shipped is required by DMF to issuance of a permit.

Mechanical Harvest Permit (Mechanical)

This permit allows lease holders to use select mechanical gears on their lease, even outside the regular seasons for mechanical harvest. If your lease is in a Primary Nursery Area (PNA) you are not allowed to use bottom disturbing gear, but you may use a winch and davit system or similar to lift and place cages or bags.

Polluted Area Relay Permit (Relay)

This permit allows leaseholders to harvest oysters or clams of any size in designated polluted areas and relay them to their lease. The lease is then closed for a period of time to allow the shellfish to "depurate" or cleanse themselves. The relay period takes place after the close of the regular oyster season.

Seed Oyster Management Area Permit (SOMA)

This permit allows leaseholders to go into designated oyster management areas open for relay to seed their leases. This activity takes place outside of the regular oyster season.

Appendix VII: Riparian Owner consent Form

I/We, the undersigned, hereby give my/our consent to (Name):

_____,

who resides at (Physical Address):

_____, to lease:

☐ Shellfish bottom

☐ Shellfish bottom and the water column within 250 feet of my/our shoreline.

_____

Signature Name (Please Print)

_____

Signature Name (Please Print)

_____

Street Address or PO Box City State/Zip Phone

SWORN to and subscribed before me

This the_____day of_____, 20__

_____

NOTARY PUBLIC

My Commission Expires: _____

(Seal)

Appendix VIII: Storm Preparedness and Gear Management Best Practices

NC Shellfish Lease and Aquaculture Program
Adapted from FDACS and UF Resource Guides

***Relocating gear and product off lease into public waters is illegal and will result in product confiscation, permit revocations, and fines.**
***Relocating gear or product to another lease outside of the growing area requires resubmergence for 21 days and proper resubmergence tagging (please refer to SS1/SS2 for guidance). The receiving lease must be permitted properly to accommodate any additional gear.**
***Relocating shellfish greater than seed size (clams 12mm in length, oysters 25mm in length) to another lease in a different growing area requires resubmergence for 21 days, proper resubmergence tagging, and recording of resubmergence activities in a logbook (please refer to proclamations SS-1/SS-2)**
***When relocating gear to another lese, the receiving lease must be permitted properly to accommodate any additional gear.**
***Moving product to a land-based cold or wet storage is only allowed by prior approval and permitting by Shellfish Sanitation as a certified shellfish dealer with wet storage permit (as applicable).**

Assessing Risks
A farm's vulnerability to risks, such as wind, storm surge, and flooding, can be assessed by reviewing previous storm trends near the farm's location. The NOAA National Hurricane Center, www.nhc.noaa. gov, has storm information (wind speed and direction, pressure, landfall) archived since 1900, which can be used to determine prevailing patterns for different growing locations. By reviewing characteristics of previous storms that have made landfall near the farm, growers can consider what they would have done to prepare and what should be included in their plan.

Preserving Business Information
Important information that must be safeguarded should be identified in the plan. A list of insurance policies and financial documents should be kept current along with locations where these documents are stored. Most of this information can be stored electronically; however, hard copies of important documents may be useful in the event of power outages. It may be prudent to duplicate some documents and keep them in different locations.

Maintaining Farm Records
Farm information, such as coordinates, maps, and diagrams of layout and gear, should be included in the plan and available immediately after the storm. Timely inventory records (number of culture units and estimated quantity, age, and sizes of oysters) should also be included. Maintaining a spreadsheet with this information is important for record-keeping required by insurance policies, business loans, or crop disaster assistance programs, such as the U.S. Department of Agriculture (USDA), Farm Service Agency's Noninsured Crop Disaster Assistance Program (NAP). Oyster inventory apps, such as Oyster Tracker or SmartOysters, are available and recommended. Inventory records should also include vehicles, boats, and motors, as well as equipment used on farms (tumblers, pressure washers, cranes or winches, etc.), at shore-based seed facilities (tanks, pumps, filtration systems, etc.), or at shellfish processing plants (forklifts, refrigerated units, etc.). Photographs and videos with time stamps of both water and land-based operations can provide timely and critical documentation.

Farm Employees
The plan should have information available for farm employees, such as an operational plan identifying essential personnel, services, and equipment, re-opening protocols, records storage, and agreements with suppliers and contractors. Information on evacuation routes, reentry requirements, shelter-in-place plans, and alternative reporting locations could be included. It is important to know how many people will be needed to implement the storm plan and who will help as a storm is approaching. Farm employees should be able to implement the storm plan themselves and be cross-trained in tasks outside their normal job duties to assist with securing gear.

Maintaining Communication
An emergency contact list (electronic and hard copies) for key personnel and businesses providing services to the farm and its customers should be developed and phone numbers kept current. Phone numbers for employees to call for information should also be included. Another communication component could be developed for the media, customers,

or public with predetermined messages and messaging platforms.

Maintain Insurance Policies

The time to review insurance policies for the business is prior to the hurricane season to ensure there is adequate coverage for flood, wind, fire, theft, general liability, catastrophic loss, loss of income, and product liability. Insurance agents should be contacted to review coverage.

Storm Preparedness Plan Blueprint

Items in yellow apply to floating bags, items in blue apply to floating cages. Items in white apply to all intensive gear types.

Installation

During installation of the farm, there are several important considerations.

1. Assess the site's exposure to storms as a primary factor in site selection.
2. Orient main lines parallel to prevailing winds and waves.
3. Choose an anchoring system suitable to the bottom type.
4. Install substantial, durable anchors (buried to at least 5 feet depth) that will hold in the farm's bottom substrate in the strongest storms (see Figure 1 for some options).
5. Bury anchors (typically helical metal screw anchors) fully in the sediment to reduce projection above the sea floor, corrosion, and tangling hazard.
6. Invest in durable main line that meets the supplier's recommendation with some protection from chafing at friction points (e.g., anchor attachment).
7. Allow sufficient spacing between lines to ensure bags do not collide in bad weather.
8. Use a system that will reinforce the bag to reduce chafing at friction points (see Figure 2 for one example).
9. If floats have removable caps, invest in and practice with a system, such as a mechanical davit or a compressor to fill floats with air (with a back-up system in place), that allows for safe and efficient sinking and re-floating of bags.
10. Invest in and practice with a system, such as a mechanical davit or a compressor to fill the floats with air (with a back-up system in place), that allows for safe and efficient sinking and re-floating of cages. (Figure 2)
11. Place identifying tags on each bag

Prior to Hurricane Season

Prior to the onset of hurricane season, oyster farmers should take these steps to reduce the risk of losses.

1. Check stocking densities and reduce as necessary (though some farmers have had success by overstocking bags to achieve neutral buoyancy just prior to a storm).
2. Check biofouling and control on a routine basis.
3. Check all lines for chafing (especially near the clips) and repair as needed.
4. Check all bag clips are secured and in good condition at attachment points.
5. Have crew conduct timed practices to gauge time needed per line to prepare for a storm.
6. For shoreside operations, pick up loose pieces of equipment and secure bags to reduce loss from flooding and wind.
7. Review storm plan with crew and family so they can account for personal preparations alongside farm preparations.
8. Maintain appropriate stocking densities so that cages are not crowded and heavy.
9. Air dry cages to control biofouling on a routine basis.
10. Make it a habit to check bridles and lines when flipping to ensure lines do not get tangled.
11. Check all door closures to ensure that the attachments are secure and not worn.
12. Have extra caps on hand in workboat.
13. Remove empty cages from the line, as these are prone to come off the line in bad weather.

During Hurricane Season

A tiered approach to preparation, which has been adopted in each fact sheet, allows growers to stage tasks based on the storm or hurricane's track forecast. The authors developed the following color codes to address increasing levels of concern and actions.

CODE YELLOW

Once a hurricane or tropical storm is projected to impact North Carolina, it is time to begin preparations according to the farm's plan. Note that the timeline is fluid and will depend on the storm's speed and track.

1. Re-check stocking densities and reduce as necessary. If opting to overstock bags to achieve slightly positive buoyancy, ensure stocking is appropriate.
2. Farmers opting to sink their bags below the surface but still float off the bottom by overstocking bags should consider taking this step now.
3. Re-check all lines for chafing (especially near the clips) and repair as needed.
4. Ensure all bag clips are secured and in good condition.
5. Secure any empty bags on shore or on lines.
6. Document the condition of the farm with dated photographs and notes.
7. Document the numbers of various sizes of oysters.
8. Review workboat(s) plan.
9. Re-check that all bridles and pucks are in good condition.
10. Re-check that all bag and cage closures are in good condition.
11. Consider consolidating all small seed (e.g., seed held in 2 mm bags) to one section of cages so that you can re-float those cages first once the threat has passed.

CODE ORANGE

Once a hurricane or tropical storm watch has been issued, final preparations should begin. In the case of a fast-moving storm, proceed with tasks associated with final stages of preparation.

1. Sell product as market allows.
2. Track the storm's progress frequently and carefully. When assessing whether to sink bags, keep in mind the amount of time necessary to carry out the sinking operation. Farmers should also weigh the risks of bags and oysters being buried in the substrate.
3. Remember that the day before the storm is to make landfall, farmers should not plan to be on the water. They will need that day for other preparations and the weather will likely not allow for it.
4. If weather conditions do not warrant sinking bags, consider adding slack to anchor lines to allow for storm surge. Alternatively, some farmers opt to tighten their mainlines to pull bags under the water surface.
5. If weather conditions warrant sinking bags, remove both floats from bags and allow them to rest on the bottom or remove one float or alternate floats to partially or completely submerge the bags to keep them just above the bottom. Store floats safely onshore.
6. For systems that have floats with caps, remove caps from floats or alternate floats and ensure all air from floats is removed when sinking.
7. Some growers suggest replacing caps on floats (once all air is removed) to prevent sediment from filling the floats (though this may depend on sediment type). This adds considerable time to preparations.
8. Prepare to implement workboat(s) plan
9. Ensure all air from floats is removed when sinking, and walk or dive over the cages to be sure the pontoons are down, with adjustments made as needed.

   *Reminder- it is illegal to relocate gear and product outside the boundaries of your shellfish lease unless they are being relocated to another, properly permitted shellfish lease

CODE RED

When a hurricane or tropical storm warning has been issued and there is a high probability of being in the path of the storm, farmers must conclude final preparations if and only if they can be accomplished safely. Farmers will make a series of personal risk assessments.

1. Conduct last check of farm.
2. Implement workboat(s) plan.
3. Get to safety.

Post-Storm Recovery

Oyster growers and their employees must be ready to take care of the needs of the farm as soon as it is safe and reasonable to do so. After a storm has passed, the following tasks should be considered.

1. Assess risk of returning to farm, and proceed only when safe.
2. Patrol the area upstream and downstream of the farm for significant debris that could entangle or dislodge gear once it is raised, and remove or secure debris.
3. Document the condition of the farm with dated photographs and notes.

4. For shellfish product that has been transported off the lease as a result of the storm, please contact Division staff for guidance.
5. Refloat bags as soon as practically possible by adding flotation and/or reducing stocking densities.
6. If caps were removed from floats, use systems designed for this task, with bags lifted from reinforced points, allowing water to drain out the end caps and being careful to work any bags out of the sea floor if necessary.
7. If necessary, use an on-board washdown hose to rinse sediment off the bags or out of floats and recap once washed down.
8. Assess and document oyster survival, gear condition, and losses.
9. Once mortality risk has passed, resume normal biofouling regimen.
10. Communicate with public agencies about closures and effects of the storm.
11. Communicate with buyers and suppliers to provide situation and outlook reports.

Additional Resource Links

NCDMF Contacts and Resources
https://deq.nc.gov//shellfish-lease
https://deq.nc.gov/about/divisions/marine-fisheries/shellfish-sanitation-and-recreational-water-quality
https://deq.nc.gov/about/divisions/marine-fisheries/rules-proclamations-and-size-and-bag-limits/polluted-area-proclamations (Current Polluted Areas Proclamations)
https://deq.nc.gov/about/divisions/marine-fisheries/rules-proclamations-and-size-and-bag-limits/fisheries-management-proclamations (Current SS Proclamations)

University of Florida Storm Prep Resource Guides
(While some of this information is specific to Florida, much of it can be adapted for North Carolina shellfish farms as well.)

- Introduction: https://shellfish.ifas.ufl.edu/wp-content/uploads/oyster.aquaculture.introductory.pdf
- Land Based Operations: https://shellfish.ifas.ufl.edu/wp-content/uploads/oyster.aquaculture.LBO_.pdf
- Workboats: https://shellfish.ifas.ufl.edu/wp-content/uploads/oyster.aquaculture.workboats.pdf
- Adjustable Longline Guide: https://shellfish.ifas.ufl.edu/wp-content/uploads/oyster.aquaculture.ALF_.pdf
- Floating Cage Farms Guide: https://shellfish.ifas.ufl.edu/wp-content/uploads/oyster.aquaculture.cages_.pdf
- Floating Bag Farm Guide: https://shellfish.ifas.ufl.edu/wp-content/uploads/oyster.aquaculture.bags_.pdf