

Fiscal Impact Analysis of Proposed Rule Amendments to Shellfish Leasing Regulations

Rule Amendments: 15A NCAC 03O .0201
15A NCAC 03O .0202
15A NCAC 03O .0204

Name of Commission: N.C. Marine Fisheries Commission

Agency Contact: David Dietz, Fisheries Economics Program Manager
N.C. Division of Marine Fisheries
3441 Arendell Street
Morehead City, NC 28557
(919) 707 8573
david.dietz@ncdenr.gov

Impact Summary: State government: Yes
Local government: Yes
Federal government: No
Substantial impact: No

Authority:

North Carolina General Statutes
 § 76-40. Navigable waters; certain practices regulated.
 § 113-134. Rules
 § 113-182. Regulation of fishing and fisheries.
 § 113-201. Legislative findings and declaration of policy; authority of Marine Fisheries Commission.
 § 113-202. New and renewal leases for shellfish cultivation; termination of leases issued prior to January 1, 1966.
 § 113-202.1. Water column leases for aquaculture.
 § 113-202.2. Water column leases for aquaculture for perpetual franchises.
 § 113-205. Registration of grants in navigable waters; exercise of private fishery rights.
 § 113-206. Chart of grants, leases and fishery rights; overlapping leases and rights; contest or condemnation of claims; damages for taking of property.
 § 143B-289.52. Marine Fisheries Commission - powers and duties.

Necessity: General Statute 150B-21.3A requires state agencies to review their existing rules every 10 years to determine which rules are still necessary, and to either readopt or repeal each rule as appropriate. Three rules in 15A NCAC 03O .0200 are proposed for readoption pursuant to this requirement. Additionally, Session Law 2019-37 was passed with the explicit goal of providing increased support to the state's shellfish aquaculture industry. Central to this was the goal of understanding user conflict issues of shellfish leasing and amending state regulations based on these findings. Proposed rule amendments are based on these results and aim to reduce user conflict issues while supporting a productive shellfish aquaculture industry.

I. Summary

Proposed rule amendments to shellfish aquaculture leasing aim to address user conflict issues through a variety of measures. Specifically, the amendments proposed would increase setback limits from developed shorelines for new shellfish leases, limit the allowable number of corners for demarcating shellfish leases to simplify polygon shape, set new criteria for shellfish lease stakes and signage to alleviate navigation concerns, and initiate a new leaseholder training program that emphasizes user conflict reduction strategies. In all, this collection of proposed rule amendments will incur a variety of administrative and procurement costs, as well as a reduction in potential future earnings due to a reduction in available shellfish lease space. However, as these rules seek to address user conflict issues, there are a number of non-quantifiable benefits to the state, as user conflict will decline due to decreases in both visual and direct interaction with shellfish leases in the state. In all, the fiscal impacts in terms of both costs and benefits to the state are not expected to be significant; no new costs to enforcement are estimated from these proposed rule changes as well.

II. Introduction and Purpose of Rule Changes

The North Carolina General Assembly passed Session Law (S.L.) 2019-37 effective July 1, 2019. The General Assembly noted that the purpose of the bill is “to provide further support to the shellfish aquaculture industry in the State of North Carolina.” Section 9 of the bill requires the North Carolina Department of Environmental Quality (NCDEQ), Division of Marine Fisheries (DMF) and North Carolina Marine Fisheries Commission (MFC) to study how to reduce user conflict related to shellfish cultivation leases, and to adopt rules and reform internal operating procedures consistent with the findings of the study.

The increase in coastal populations coupled with the growth of the shellfish aquaculture industry, particularly with respect to utilizing floating gear, has led to user conflicts regarding the use of coastal and estuarine waters. User conflicts are generally described as disagreements that arise between multiple users of areas leased for private shellfish cultivation purposes, commonly referred to as shellfish aquaculture or shellfish leases. DMF and MFC address topics pertinent to user conflicts in the shellfish aquaculture industry in the User Conflict Study. The study also discusses the existing regulatory framework governing shellfish leases in North Carolina (Appendix III).

The User Conflict Study recommends a multifaceted approach to address user conflict issues related to shellfish leases in North Carolina. This approach envisions regulatory reform, program evaluation, collaboration, and resource assessment. To accomplish this, existing shellfish lease rules require amending to affect execution of the recommendations in the study. Recommendations for amending shellfish lease rules to begin addressing user conflict issues were made in the User Conflict Study. These recommendations were translated into the proposed rule amendments discussed here and cover a broad suite of approaches in order to simultaneously maintain a strong focus on shellfish aquaculture production, while also reducing user conflict between growers and the surrounding community.

Firstly, 15A NCAC 03O .0201 proposes to modify the setback requirement for shellfish leases from a developed shoreline. Currently, shellfish leases must be 100 feet from a developed shoreline, but the proposed rule extends that to 250 feet from a developed shoreline or a water-dependent shore-based structure to help alleviate user conflict with riparian owners. The MFC

voted to include “shore based structure” at its February 2020 business meeting, following submission of the User Conflict Study in November 2019. After review by DEQ legal counsel, it was determined that additional language was needed to define “shore-based structure”. Proposed language was added to the rule consistent with water-dependent uses described by the Coastal Resources Commission at 15A NCAC 07H .0208(a)(1), which says: “Uses that are water dependent include: utility crossings, wind energy facilities, docks, wharves, boat ramps, dredging, bridges and bridge approaches, revetments, bulkheads, culverts, groins, navigational aids, mooring pilings, navigational channels, access channels and drainage ditches.”

The amendments to the rule also propose a 250-foot setback requirement between any new shellfish leases and existing shellfish leases. Currently, there is no setback requirement between shellfish leases. Lastly, this rule is proposed to be amended to add cumulative language, implementing the MFC’s authority to limit the number of acres leased in any area that may be granted as shellfish leases as set forth in G.S. 113-201. The intention of this proposed rule change is to allow flexibility to ensure shellfish leases do not impose on navigation or existing, traditional uses of the area and to assure the public that some waters will remain open and free from shellfish cultivation activities.

Next, 15A NCAC 03O .0202 proposes two amendments to further reduce user conflicts. The rule modifies marking requirements for shellfish leases and franchises to limit the allowable number of corners for defining the area to be leased to eight, to simplify polygon shape. Also, proposed changes require the shellfish lease applicant to be responsible for ensuring the sign that the applicant is currently required to attach to each corner stake with details about the shellfish lease remains in place until the application process is completed. This signage is provided by the DMF. The need for more noticeable shellfish lease markings has been a safety concern. The proposed change to a maximum of eight corners is being made in consultation with the Division of Coastal Management (DCM) to improve navigation, increase safety, and make managing shellfish leases more efficient. This rule also proposes an amendment to modify training requirements for shellfish lease applicants to include information about user conflicts and the public trust.

Currently, North Carolina requires shellfish lease applicants to complete an examination scoring a minimum of 70 percent based on an educational package provided by the DMF. The DMF established the examination to demonstrate the applicant’s knowledge of the: shellfish lease application process, shellfish lease planting and production requirements, shellfish lease marking requirements, shellfish lease fees, shellfish harvest area closures due to pollution, safe handling practices, shellfish lease contracts and renewals, shellfish lease termination criteria, and shellfish cultivation techniques. Many states have cooperative extension programs which provide classes and training that introduce potential applicants to the fundamentals of shellfish aquaculture and the regulatory process. This amendment will create the Shellfish Aquaculture Education Program, adding to the body of information provided by the DMF on shellfish aquaculture to shellfish lease applicants. Additional topics include aquaculture permits, best management practices, and shellfish lease user conflict avoidance.

Lastly, 15A NCAC 03O .0204 follows suit on the proposed rule language for shellfish lease stakes and adds new requirements for the size and markings of stakes for public safety. Structurally, rule amendments propose that corner stakes must be between three and 12 inches in diameter and must extend at least four feet above the mean high water mark. Currently, corner stakes must be greater than three inches per MFC rule but no more than four inches per DCM

policy. Working with DCM, it was established that a wide range of diameters for corner stakes would complement the proposed eight-corner maximum, as it would assure greater stake visibility when fewer stakes are allowed. If a shellfish leaseholder would like corner stakes over 12 inches they would need a CAMA major permit before their shellfish lease application would be processed. Finally, this rule also proposes amendments to require each corner stake to have yellow light reflective tape or yellow light reflective devices, while each water column shellfish lease must have additional signage on each corner stake providing caution to improve navigational and visibility concerns.

These changes were made in consultation with DCM to improve navigation, increase safety, and make managing shellfish leases more efficient. Included is language to point a stakeholder to the need for additional CAMA permits and the associated CAMA statute references. These include G.S. 113A-118, which requires a CAMA permit if development is proposed, and the Dredge and Fill Law at G.S. 113-229, which requires a permit for any proposed dredging or filling in coastal wetlands or estuarine waters of the state.

III. Fiscal Analysis

This package of proposed rule amendments seeks to institute a number of structural changes to how shellfish leases are designed and operate, and will therefore incur an offsetting balance of costs to the state to implement, as well as benefits in the form of a more efficient and public-friendly shellfish aquaculture industry. Additionally, while the new proposed requirements for 15A NCAC 03O .0204 regarding corner stakes would affect marking requirements for both existing and all future shellfish leaseholders, existing shellfish leaseholders would not be affected by the other proposed amendments, including setback requirements, training, and corner marker limits. The only exception to this is that existing shellfish leaseholders who do not meet production requirements will also need to fulfill the new proposed training requirements, though this has historically been an extremely rare occurrence.

With this, it is then helpful to understand the current characteristics of active shellfish leases in North Carolina to see the extent to which new and existing shellfish leases would be affected by the proposed rule changes. Specifically, for those rules only affecting new shellfish leases, it is beneficial to know how many existing shellfish leases would be out of compliance under these new rules to see how great this regulatory burden would be on applicants.

Considering setbacks, a transition from 100 to 250 feet from developed shorelines would result in a tangible loss of available acreage for shellfish leasing moving forward. However, DMF has determined that the exact amount of acreage lost cannot be accurately quantified at this time. Despite this, given the amount of available leasing space still within North Carolina's waters, this reduction is not expected to create a significant loss in available production for the future. Additionally, DMF estimates that 145 current shellfish leases reside at least partially within 250 feet of shore. With 304 active shellfish leases in North Carolina, this represents roughly 48% of all active shellfish leases. However, this estimate comes from a measurement of all shoreline, not just those defined as developed. Therefore, the number of shellfish leases that are actually within the proposed setback may be slightly lower than the 145 estimated. Additionally, the number of shellfish leases that are currently positioned less than 250 feet from another shellfish lease cannot be accurately quantified, but in terms of available acres of potential leasing, it is not considered to be a significant economic cost to the state or existing shellfish leaseholders.

Regarding the new proposed rules for shellfish lease stakes, there are estimated to be 40 active shellfish leases with more than eight corners at this time. With 304 total active shellfish leases, this represents roughly 13% of all shellfish leases in the state, suggesting this proposed rule change would not be overly burdensome on future applicants. Additionally, while the exact number is not known at this time, the DMF has found that historically, roughly 80% of shellfish leases lack the appropriate signage and reflective taping needed to be in compliance with the proposed rule change. Lastly, as the mean high-water mark is variable throughout the state's waterbodies, the DMF is not able to accurately quantify the number of active shellfish leases with stakes less than four feet above the mean high-water mark. However, this is again not expected to incur any significant impacts to North Carolina. With all of this baseline information, it is now possible to better understand the fiscal impacts of these proposed rule changes to both future and existing shellfish leaseholders.

a. Summary of Potential Economic Benefits

Overall, this collection of proposed rule changes will have meaningful economic benefits to the state and coastal communities of North Carolina through a reduction in overall user conflict. The first mechanism through which this will occur is a reduction in physical interaction between the public and shellfish leases by increasing the developed shoreline setback distance. By increasing future shellfish leases' distance from developed shorelines by 150%, the visual impact on the public from these operations will be reduced, as well as the likelihood of interacting with both the shellfish lease site and its operators from the shoreline. In tandem, this will lead to a non-quantifiable benefit to the state as overall interactions between shellfish aquaculture and the public will decrease, which will improve the overall utility of the shoreline and waters close to shore. Additionally, this setback may have a corresponding positive effect on local house prices, which would improve tax revenues to the state, as well as the local community. However, the exact economic impact of this setback on house prices cannot be quantified but is not expected to be significant. Lastly, while it is unknown how many active shellfish leases operate within 250 feet of another shellfish lease, by establishing that setback distance for all future operations, there will also be benefits in terms of a reduction in user conflict between abutting shellfish lease operations. This setback distance will likely create more efficient shellfish aquaculture operations, as there will be a decrease in interaction between shellfish leases.

In addition to the benefits from proposed setback requirements, there will also be decreases in user conflicts from the proposed rule changes to stakes and signage. By limiting the number of corner stakes, increasing stake diameter, mandating minimum stake height, and adding more reflective tape and signage, there will be economic benefits to the state in terms of improved navigation efficiency and public safety. These rule changes are all proposed with the intention of making it easier for individuals on the water to identify and properly navigate around shellfish leases. This can have the resulting effects of faster and more efficient navigation, as well as reduced likelihood of navigating through shellfish leases which can harm vessels, individuals, and the shellfish products within the shellfish leases.

These changes will all generate tangible economic benefits, as less physical damage will occur, navigation will be more efficient, and shellfish leases will be able to operate more efficiently as the public is not interacting with them as frequently. On top of this, the state will also generate a lasting flow of economic benefits in terms of simplified administration. By putting a cap on the number of corner stakes any shellfish lease can have, the planning and permitting process will be more focused and streamlined, allowing the state to review, approve, and process shellfish lease

applications more quickly, thereby reducing the time-cost of administration to the state, and reducing the time potential shellfish leases spend waiting to begin operations. However, the exact degree to which these efficiencies will occur is unknown, and therefore the value of this benefit cannot be quantified.

Lastly, beyond the economic benefits resulting from the structural changes proposed to shellfish lease sites, there will also be long-term reductions in user conflicts from the updated training program. While a training program has already been in place to assure operators understand the components of running a shellfish lease site, the proposed changes would incorporate additional elements focusing on permitting, best management practices, and user conflict avoidance. These particular subjects were selected based on the results of the User Conflict Study (Appendix III), as well as in consultation with Carteret Community College (CCC) and the N.C. Sea Grant, to most effectively reduce the likelihood of user conflict issues by shellfish leaseholders. By instilling these concepts into new shellfish leaseholders before their operations even commence, the state will likely see even more economic benefits from user conflict reduction year over year, and will likely reduce the need for future changes to shellfish lease site regulations, as users will be better informed on how to prevent user conflicts from the start. Lastly, it is also important to note that this updated curriculum is being developed through a grant awarded to CCC and N.C. Sea Grant in the amount of approximately \$100,000. Thus, there is no cost to the state to update the training program proposed in this rule change.

b. Summary of Potential Economic Costs

In assessing the economic costs to the state from these proposed rule changes, the impacts fall into two discrete categories: loss of available shellfish lease acreage, which can impact future production capacity, and costs to the state to implement the new proposed stake and signage regulations.

While the proposed setback requirements would generate a flow of economic benefits to the state from user conflict reductions, the tradeoff is the reduction in physical space available for shellfish leases. As setback requirements are increased throughout the state, total available acreage for future shellfish leasing is reduced, though the exact amount cannot be accurately quantified at this time. However, as much of the available leasing acreage in the state is still unused, this reduction should not have a significant impact on production capacity for the state and should not incur any significant costs. Despite this, it is important to note that this proposed rule change would have a greater effect on coastal areas of the state with narrow waterbodies, such as tidal rivers and creeks, which may become wholly inaccessible to shellfish leasing under a 250-foot setback. This will have a greater impact on the southern region of the state where there are more narrow waterbodies throughout. While this proposed rule change is not overly restrictive, as there is still a large expanse of area available to shellfish leasing, it does limit the overall output potential for the state in the long term, with variable effects across the state depending on shoreline shape. While these costs will affect maximum oyster production potential, the total value cannot be accurately quantified, but is not expected to be a significant impact to the state.

The other cost impacts to North Carolina from these proposed rule changes are the administrative and physical costs related to changes to shellfish lease stakes and signage. From a hard-cost perspective, the only economic burden placed on the state comes from the proposed

changes to 15A NCAC 03O .0202 that would require each shellfish lease corner stake to have signage attached describing the shellfish lease. While leaseholders are responsible for generating the permanent signage for their stakes once leases are approved, DMF provides signage for proposed shellfish lease sites during the application process. With this, the cost per temporary sign does not generate a significant cost to the state and will not generate any significant fiscal impacts.

Aside from this one procurement impact to the state, all other costs related to the physical design of shellfish leases will fall on the operators and will primarily affect new applicants. The proposed rule changes to setbacks and limits to corner stake totals will only affect new applicants, and will therefore only affect new shellfish leaseholders, lowering the overall economic strain on this group. Additionally, no existing shellfish leaseholders are out of compliance with the proposed rule changes to corner stake diameter, significantly lowering the overall burden of this regulation as well. Lastly, while roughly 80% of existing shellfish leases lack the appropriate signage and reflective tape under the proposed rule changes, these costs are expected to be low, and will not be overly burdensome on new and existing shellfish leases. In all, while these hard-cost impacts are not falling on the state, and therefore not a required component of this fiscal analysis, it is helpful to note that the proposed rule changes to shellfish lease designs would not create an undue economic burden on these stakeholders.

With that, it is important to consider the costs the state may incur from administering these proposed rule changes. As these new guidelines would impact both existing shellfish leases and the criteria for new shellfish lease applications, there will likely be an increased time-cost to the state in the near-term as it adjusts to the new regulations and shellfish leasing criteria. Additionally, there may be an additional burden on the state under the new setback requirements, as it may take more time to establish areas acceptable for shellfish leasing. However, these costs are not expected to continue long into the future, and are not expected to bear a significant impact onto the state.

Lastly, as the DMF is charged with regularly monitoring and inspecting shellfish leases throughout the state, there is not expected to be any additional cost of enforcement due to these proposed rule changes.

Appendix I: Supporting Data

Table 1. Number of existing shellfish bottom leases and proposed shellfish leases that are partially within the proposed 250-foot setback.

County	Shellfish Lease		Total
	Existing	Proposed	
Beaufort	1	0	1
Carteret	53	7	60
Dare	0	0	0
Hyde	13	1	14
New Hanover	3	0	3
Onslow	28	9	37
Pamlico	3	0	3
Pender	44	8	52
Total	145	25	170

Appendix II Proposed Rule Changes:

15A NCAC 030 .0201 is proposed for readoption with substantive changes as follows:

15A NCAC 030 .0201 STANDARDS AND REQUIREMENTS FOR SHELLFISH BOTTOM LEASES AND FRANCHISES AND WATER COLUMN LEASES

(a) All areas of the public bottom underlying Coastal Fishing Waters shall meet the following standards and requirements, in addition to the standards in G.S. 113-202, in order to be deemed suitable for leasing for shellfish cultivation purposes:

- (1) the proposed lease area shall not contain a "natural shellfish bed," as defined in G.S. 113-201.1, or have 10 bushels or more of shellfish per acre;
- (2) the proposed lease area shall not be closer than ~~100-250 feet to from~~ a developed ~~shoreline, shoreline or a water-dependent shore-based structure~~, except no minimum setback is required when the area to be leased borders the applicant's property, the property of "riparian owners" as defined in G.S. 113-201.1 who have consented in a notarized statement, or is in an area bordered by undeveloped ~~shoreline; and shoreline~~. For the purposes of this Rule, a water-dependent shore-based structure shall include docks, wharves, boat ramps, bridges, bulkheads, and groins;
- (3) the proposed lease area shall not be closer than 250 feet to an existing shellfish lease;
- (4) the proposed lease area, either alone or when considered cumulatively with existing shellfish leases in the area, shall not interfere with navigation or with existing, traditional uses of the area; and
- ~~(5)~~ (5) the proposed lease area shall not be less than one-half acre and shall not exceed 10 acres.

(b) To be suitable for leasing for aquaculture purposes, water columns superjacent to leased bottom shall meet the standards in G.S. 113-202.1 and water columns superjacent to franchises recognized pursuant to G.S. 113-206 shall meet the standards in G.S. 113-202.2.

(c) Franchises recognized pursuant to G.S. 113-206 and shellfish bottom leases shall be terminated unless they meet the following requirements, in addition to the standards in and as allowed by G.S. 113-202:

- (1) they produce and market 10 bushels of shellfish per acre per year; and
- (2) they are planted with 25 bushels of seed shellfish per acre per year or 50 bushels of cultch per acre per year, or a combination of cultch and seed shellfish where the percentage of required cultch planted and the percentage of required seed shellfish planted totals at least 100 percent.

(d) Water column leases shall be terminated unless they meet the following requirements, in addition to the standards in and as allowed by G.S. 113-202.1 and 113-202.2:

- (1) they produce and market 40 bushels of shellfish per acre per year; or
- (2) the underlying bottom is planted with 100 bushels of cultch or seed shellfish per acre per year.

(e) The following standards shall be applied to determine compliance with Paragraphs (c) and (d) of this Rule:

- (1) Only shellfish marketed, planted, or produced as defined in 15A NCAC 031 .0101 as the fishing activities "shellfish marketing from leases and franchises," "shellfish planting effort on leases and franchises," or "shellfish production on leases and franchises" shall be included in the lease and franchise reports required by Rule .0207 of this Section.
- (2) If more than one lease or franchise is used in the production of shellfish, one of the leases or franchises used in the production of the shellfish shall be designated as the producing lease or franchise for those shellfish. Each bushel of shellfish shall be produced by only one lease or franchise. Shellfish transplanted between leases or franchises shall be credited as planting effort on only one lease or franchise.
- (3) Production and marketing information and planting effort information shall be compiled and averaged separately to assess compliance with the requirements of this Rule. The lease or franchise shall meet both the production requirement and the planting effort requirement within the dates set forth in G.S. 113-202.1 and G.S. 202.2 to be deemed in compliance for shellfish bottom leases. The lease or franchise shall meet either the production requirement or the planting effort requirement within the dates set forth in G.S. 113-202.1 and G.S. 202.2 to be deemed in compliance for water column leases.
- (4) All bushel measurements shall be in standard U.S. bushels.
- (5) In determining production and marketing averages and planting effort averages for information not reported in bushel measurements, the following conversion factors shall be used:
 - (A) 300 oysters, 400 clams, or 400 scallops equal one bushel; and

- (B) 40 pounds of scallop shell, 60 pounds of oyster shell, 75 pounds of clam shell, or 90 pounds of fossil stone equal one bushel.
- (6) Production and marketing rate averages shall be computed irrespective of transfer of the lease or franchise. The production and marketing rates shall be averaged for the following situations using the time periods described:
- (A) for an initial bottom lease or franchise, over the consecutive full calendar years remaining on the bottom lease or franchise contract after December 31 following the second anniversary of the initial bottom lease or franchise;
- (B) for a renewal bottom lease or franchise, over the consecutive full calendar years beginning January 1 of the final year of the previous bottom lease or franchise term and ending December 31 of the final year of the current bottom lease or franchise contract;
- (C) for a water column lease, over the first five-year period for an initial water column lease and over the most recent five-year period thereafter for a renewal water column lease; or
- (D) for a bottom lease or franchise issued an extension period under Rule .0208 of this Section, over the most recent five-year period.
- (7) In the event that a portion of an existing lease or franchise is obtained by a new owner, the production history for the portion obtained shall be a percentage of the originating lease or franchise production equal to the percentage of the area of lease or franchise site obtained to the area of the originating lease or franchise.
- (f) Persons holding five or more acres under all shellfish bottom leases and franchises combined shall meet the requirements established in Paragraph (c) of this Rule before submitting an application for additional shellfish lease acreage to the Division of Marine Fisheries.

History Note: Authority G.S. 113-134; 113-182; 113-201; 113-202; 113-202.1; 113-202.2; 113-206; 143B-289.52;
Eff. January 1, 1991;
Amended Eff. May 1, 1997; March 1, 1995; March 1, 1994; September 1, 1991;
Temporary Amendment Eff. October 1, 2001;
Amended Eff. May 1, 2017; October 1, 2008; April 1, 2003;
Readopted Eff. May 1, 2021.

15A NCAC 030 .0202 is proposed for reoption with substantive changes as follows:

15A NCAC 030 .0202 SHELLFISH BOTTOM AND WATER COLUMN LEASE APPLICATIONS

(a) Application forms are available from the ~~Division's office headquarters at~~ Division of Marine Fisheries, 3441 Arendell Street, Morehead City, NC 28557 for persons desiring to apply for shellfish bottom and water column leases. Each application shall be accompanied by a map or diagram prepared at the applicant's expense including an inset vicinity map showing the location of the proposed lease with detail sufficient to permit on-site identification and ~~must~~ shall meet the information requirements pursuant to G.S. 113-202(d).

(b) As a part of the application, the applicant shall submit a ~~management plan~~ Shellfish Lease Management Plan for the area to be leased on a form provided by the Division ~~which meets the following standards; that shall:~~

- (1) ~~States state~~ the methods through which the applicant will cultivate and produce shellfish consistent with the minimum requirements ~~set forth in 15A NCAC 030 .0201; in accordance with Rule .0201 of this Section;~~
- (2) ~~States state~~ the time intervals during which various phases of the cultivation and production plan will be achieved;
- (3) ~~States state~~ the materials and techniques that will be utilized in management of the lease;
- (4) ~~Forecasts forecast~~ the results expected to be achieved by the management activities; ~~and~~
- (5) ~~Describes describe~~ the productivity of any other leases or franchises held by the ~~applicant; applicant;~~ and
- (6) state the locations of each corner defining the area to be leased with no more than eight corners.

(c) The completed application, map or diagram, and ~~management plan~~ Shellfish Lease Management Plan for the requested lease shall be accompanied by the non-refundable filing fee set forth in G.S. 113-202(d1). An incomplete application shall be returned and not considered further until re-submitted complete with all required information.

(d) Applicants and transferees not currently holding a shellfish cultivation lease, and applicants and transferees holding one or more shellfish cultivation leases which are not meeting production requirements, shall complete ~~and submit an examination, with a minimum of 70 percent correct answers, based on an educational package~~ the Shellfish Aquaculture Education Program provided by the ~~Division of Marine Fisheries; Division.~~ Division. ~~The examination~~ Shellfish Aquaculture Education Program shall demonstrate the applicant's knowledge of; provide the applicant information on shellfish aquaculture including:

- (1) ~~the shellfish lease application process;~~
- (2) ~~shellfish lease planting and production requirements;~~
- (3) ~~lease marking requirements;~~
- (4) ~~lease fees;~~
- (5) ~~shellfish harvest area closures due to pollution;~~
- (6) ~~safe handling practices;~~
- (7) ~~lease contracts and renewals;~~
- (8) ~~lease termination criteria; and~~
- (9) ~~shellfish cultivation techniques.~~
- (1) shellfish lease application process;
- (2) shellfish lease requirements and techniques;
- (3) shellfish sanitation and National Shellfish Sanitation Program requirements;
- (4) shellfish harvest requirements;
- (5) aquaculture permits;
- (6) best management practices; and
- (7) shellfish lease user conflict avoidance.

(e) After an application is deemed to have met all requirements and is accepted by the Division, the applicant shall identify the area for which a lease is requested with stakes at each corner in accordance with ~~15A NCAC 030 .0204(a)(1)(A); Rule .0204(a)(1)(A) of this Section.~~ The applicant shall attach to each stake a sign, provided by the Division containing the name of the applicant, the date the application was filed, and the estimated acres. The applicant shall be responsible for ensuring the sign remains in place until the lease application process is completed.

History Note: Authority G.S. 113-134; 113-182; 113-201; 113-202; 143B-289.52;
 Eff. January 1, 1991;
 Amended Eff. April 1, 2011; September 1, 2005; May 1, 1997; September 1, 1991;
Readopted Eff. May 1, 2021.

15A NCAC 030 .0204 is proposed for readoption with substantive changes as follows:

15A NCAC 030 .0204 MARKING SHELLFISH LEASES AND WATER COLUMN LEASES AND FRANCHISES

(a) All shellfish bottom leases, franchises, and water column leases shall be marked by the leaseholder or franchise holder as follows:

- (1) Shellfish bottom leases and franchises shall be marked by:
 - (A) ~~Stakes~~ stakes of wood or plastic material ~~at least three inches in diameter no less than three inches in diameter and no more than 12 inches in diameter at the water level mean high water mark~~ and extending at least four feet above the mean high water mark for each corner, ~~except stakes more than 12 inches in diameter approved as part of a Coastal Area Management Act Permit issued in accordance with G.S. 113A-118 and G.S. 113-229 shall be allowed.~~ The stakes shall be firmly jettied or driven into the bottom at each ~~corner~~ corner as set forth in Rule .0202(b)(6) of this Section.
 - (B) ~~Signs~~ signs displaying the number of the lease or franchise and the name of the owner printed in letters at least three inches high must be firmly attached to each corner stake.
 - (C) ~~yellow light reflective tape or yellow light reflective devices shall be affixed to each corner stake, shall cover a vertical distance of not less than 12 inches, and shall be visible from all directions.~~
 - ~~(C)~~(D) Supplementary ~~supplementary~~ stakes of wood or plastic ~~material, material no less than three inches in diameter and no more than four inches in diameter, not farther apart than 50 yards-150 feet or closer together than 50 feet and extending at least four feet above the mean high water mark, must shall be placed along each boundary, except when such would interfere if doing so interferes with the use of traditional navigation channels.~~
- (2) ~~Water~~ Shellfish water column leases shall be marked ~~by anchoring two yellow buoys, meeting the material and minimum size requirements specified in 15A NCAC 3J .0103(b) at each corner of the area or by larger buoys, posts and by signs giving notice and providing caution in addition to the required signs as identified and approved by the Secretary in the Management Plan. management plan.~~

(b) Stakes marking areas of management within shellfish bottom leases or franchises, as approved in the management plan, ~~must shall~~ conform to ~~Subparagraph (a)(1)(C)~~ Part (a)(1)(D) of this Rule and may not exceed one for each 1,200 square feet. Marking at concentrations of stakes greater than one for each 1,200 square feet constitutes use of the water column and a water column lease is required in accordance with G.S. 113-202.1 or G.S. 113-202.2.

(c) All areas claimed in filings made pursuant to G.S. 113-205 as deeded bottoms through oyster grants issued by the county clerk of court or as private bottoms through perpetual franchises issued by the Shellfish Commission shall be marked in accordance with Paragraph (a) of this Rule, except the sign shall include the number of the franchise rather than the number of the lease. However, claimed areas not being managed and cultivated shall not be marked.

~~(d) It is unlawful to fail to remove all stakes, signs, and markers within 30 days of receipt of notice from the Secretary pursuant to Departmental Rule 15A NCAC 1G .0207 that a G.S. 113-205 claim to a marked area has been denied.~~

~~(e)(d)~~ It ~~is shall be~~ unlawful to 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 wading~~, and navigation.

~~(f)(e)~~ The Division has no duty to protect any shellfish bottom lease, franchise, or water column lease not marked in accordance with Paragraph (a) of this Rule.

History Note: Authority G.S. 76-40; 113-134; 113-182; 113-201; 113-202; 113-202.1; 113-202.2; 113-205; 143B-289.52;
Eff. January 1, 1991;
Amended Eff. September 1, 1997; March 1, 1994; October 1, 1992; September 1, 1991;
Readopted Eff. May 1, 2021.

Appendix III: Shellfish Aquaculture User Conflict Study

Study On How to Reduce User Conflict Related to Shellfish Cultivation Leases



N.C. Department of Environmental Quality, Division of Marine Fisheries
and
N.C. Marine Fisheries Commission

November 8, 2019

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I. Introduction

The North Carolina General Assembly passed Session Law (“S.L.”) 2019-37 effective July 1, 2019. The General Assembly noted that the purpose of the bill is “to provide further support to the shellfish aquaculture industry in the State of North Carolina.”¹ Section 9 of the bill requires the North Carolina Department of Environmental Quality (“NCDEQ”), Division of Marine Fisheries (“DMF”) and the North Carolina Marine Fisheries Commission (“MFC”) to study how to reduce user conflict related to shellfish cultivation leases, and to adopt rules and reform internal operating procedures consistent with the findings of the study.

¹ <https://www.ncleg.gov/EnactedLegislation/SessionLaws/PDF/2019-2020/SL2019-37.pdf>

User conflicts are generally described as disagreements that arise between multiple users of areas leased for private shellfish cultivation purposes, commonly referred to as shellfish aquaculture or shellfish leases. Individuals use public trust waters in a variety of ways including navigating, swimming, hunting, fishing, and other recreational activities. The increase in coastal populations coupled with the growth of the shellfish aquaculture industry, particularly with respect to utilizing floating gear, has led to user conflicts regarding the use of coastal and estuarine waters.²

DMF and MFC address topics pertinent to user conflicts in the shellfish aquaculture industry in this study. The study also discusses the existing regulatory framework governing shellfish leases in North Carolina. DMF anticipates future amendments to shellfish lease regulations and internal changes to improve operating procedures with the objective of reducing user conflict issues. Efforts are also made to identify challenges and inefficiencies in the existing Shellfish Lease Program with suggested measures to remedy these deficiencies. The deadline for completing this study is January 1, 2020. The deadline to adopt new rules is March 1, 2021.

Some of the recommendations in this study will likely be included in future studies and directives mandated by S.L. 2019-37. These studies include:

- Shellfish Aquaculture Enterprise Areas (“SEA”) (Section 1.(a) – 1.(c));
- SEAs: Moratorium Areas (Section 1.(d));
- Pamlico Sound Shellfish Aquaculture Pilot Project (Section 2);
- Administrative Remedy for Shellfish Leasing Appeals (Sections 6.(a), 6.(b)).

DMF staff compiled information for this report from its own ongoing work, stakeholder groups, shellfish and aquaculture experts, shellfish growers, non-governmental organizations, and internal DMF shellfish staff with expertise in this area. DMF also drew upon the findings and recommendations from previous legislative studies related to shellfish leases and aquaculture. Cumulatively, the recommendations listed in this study include the provisions mandated in S.L. 2019-37, as well as considerations for enhancing existing procedures for managing the shellfish aquaculture industry and the resulting user conflicts.

The success of shellfish aquaculture operations and the high-demand for new shellfish leases exceeds traditional DMF permitting and site selection capabilities. Achieving and sustaining a successful shellfish aquaculture industry will depend on, among other things, resolution of these user conflicts. DMF envisions approaching and addressing these issues in collaboration with multiple user groups to provide outreach and feedback to ensure shellfish aquaculture operations are consistent with sound science, public trust uses, business planning, marketing, and training. The DMF Shellfish Lease Program may not be sufficiently staffed or funded to accomplish the recommendations made in this study.

² Overcoming Impediments to Shellfish Aquaculture through Legal Research and Outreach: Case Studies (National Oceanic and Atmospheric Administration, U.S. Department of Commerce), 2019
<http://nsglc.olemiss.edu/projects/shellfishaquaculture/index.html>

II. Background

A. North Carolina's Shellfish Lease Program

DMF administers the Shellfish Lease Program through its Habitat and Enhancement Section. Shellfish leases using public trust bottom areas for shellfish aquaculture (in brackish and higher salinity waters) have existed in North Carolina for over 150 years. Shellfish leases are divided into two types: bottom and water column. You must have a bottom lease to have a water column lease. The water column lease can be granted over the entire footprint of a bottom lease, or on a portion of the lease. A shellfish franchise is similar to a bottom lease except that they are recognized submerged lands claims. Shellfish growers traditionally employed cultch on bottom leases or bed clams under netting. In 1989, the General Assembly expanded traditionally based growing methods by authorizing the leasing of the water column for shellfish aquaculture for areas above a shellfish bottom lease which allow for intensive gear to be used. Extensive shellfish culture means shellfish grown on the bottom without the use of cages, racks, bags, or floats. Intensive shellfish culture means shellfish grown on the bottom or in the water column using cages, racks, bags, or floats. The General Assembly amended the shellfish leasing statutes to allow the use of gear up to 18 inches off the bottom for bottom leases in 2015.³

While shellfish water column leases have been authorized since 1989, their use has only recently increased in popularity. The large growth in shellfish water column leases has increased the use of intensive gear leading to a rise in user conflicts. DMF has observed a substantial growth in submission of shellfish lease applications in the past several years with the caveat of a slight decrease in 2018 due to Hurricane Florence and Tropical Storm Michael (Table 1; Figure 1). There are eight coastal counties which have shellfish leases (Figures 2 - 4). As of October 8, 2019, there were 50 shellfish franchises, 224 shellfish bottom leases, and 88 shellfish water column leases in North Carolina covering 1,736 acres (Table 2; Figure 5). Carteret County has 127 shellfish leases, the largest of any North Carolina county (Table 2; Figure 5). Onslow County has the most acres covered by shellfish leases at 527 acres (Table 2; Figure 5). The number of shellfish lease applications in North Carolina has increased exponentially (1,491 percent) from the period of 2005 to 2011 (22 lease applications) compared to the period of 2012 to 2019 (350 lease applications). This is an increase from 2011 (two lease applications) to 2019 (106 lease applications) of 5,200 percent (Table 1; Figure 4).

By way of comparison, the Commonwealth of Virginia has a much larger shellfish lease industry, with 5,400 leases covering 122,000 acres. Currently, Virginia has hundreds of pending applications with a staff capability to process approximately 100 applications per year.

³ N.C.G.S. § 113-202(r)

Table 1. Total shellfish lease applications for bottom leases and water column leases from 2005 through 2019.

Year	Applications	
	Bottom Lease	Water Column
2005	3	1
2006	5	1
2007	3	0
2008	5	0
2009	0	0
2010	1	1
2011	1	1
2012	8	6
2013	6	10
2014	8	7
2015	9	2
2016	10	11
2017	52	46
2018	36	33
2019	58	48
Total	205	167

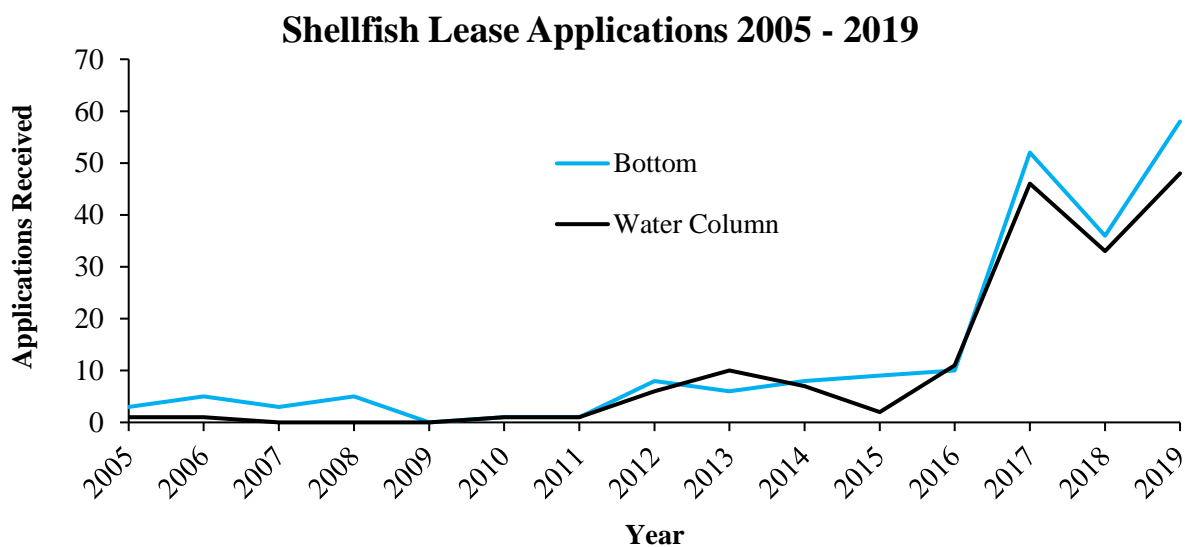


Figure 1. Total shellfish lease applications for bottom leases and water column leases from 2005 through 2019.

Table 2. Total number and acres of shellfish aquaculture leases per county and lease type sorted by total number of leases (highest to lowest).

County ¹	Bottom		Water Column		Franchise		Total	
	Number	Acres	Number	Acres	Number	Acres	Number	Acres ²
Carteret	87	318	38	98	2	2	127	417
Onslow	43	323	11	29	28	204	82	556
Pender	43	225	9	10	0	0	52	236
Hyde	26	255	11	40	9	236	46	531
Pamlico	9	52	8	48	10	71	27	171
N. Hanover	7	17	5	12	1	3	13	33
Dare	7	24	5	18	0	0	12	42
Beaufort	2	6	1	1	0	0	3	6
Total	224	1,219	88	255	50	517	362	1,736

¹ Current as of October 8, 2019

² Total only includes bottom and franchise because water column leases are over bottom lease

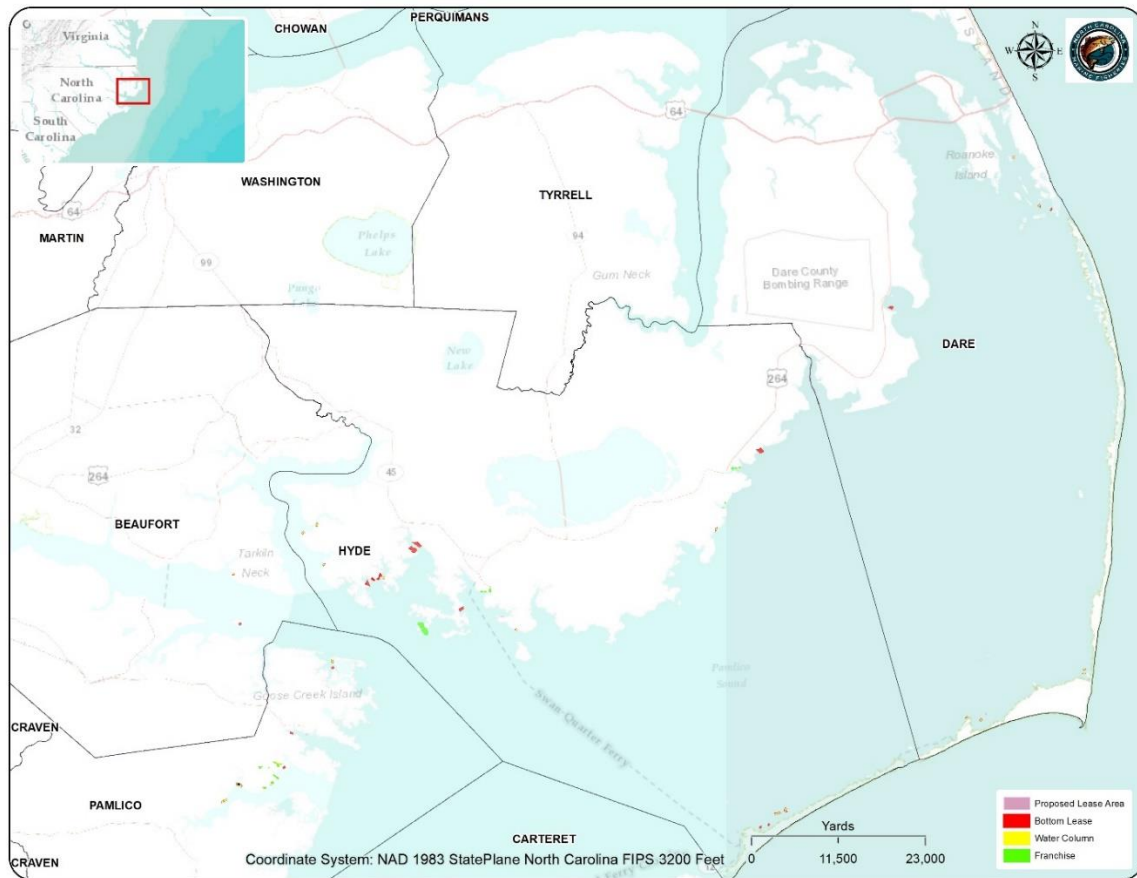


Figure 2. Active and proposed shellfish leases (bottom, water column, and franchise) in the northern region of the state.

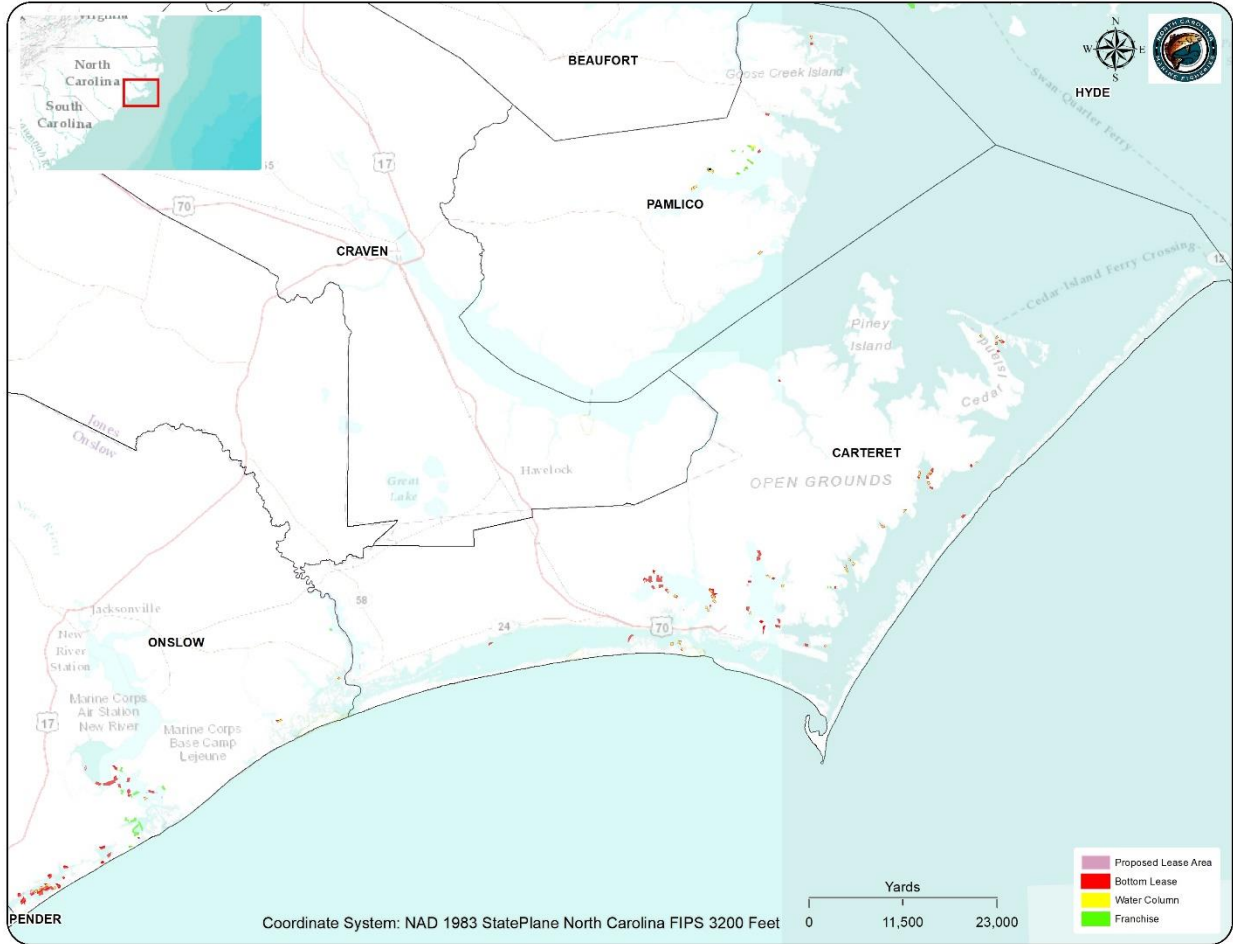


Figure 3. Active and proposed shellfish leases (bottom, water column, and franchise) in the central region of the state.

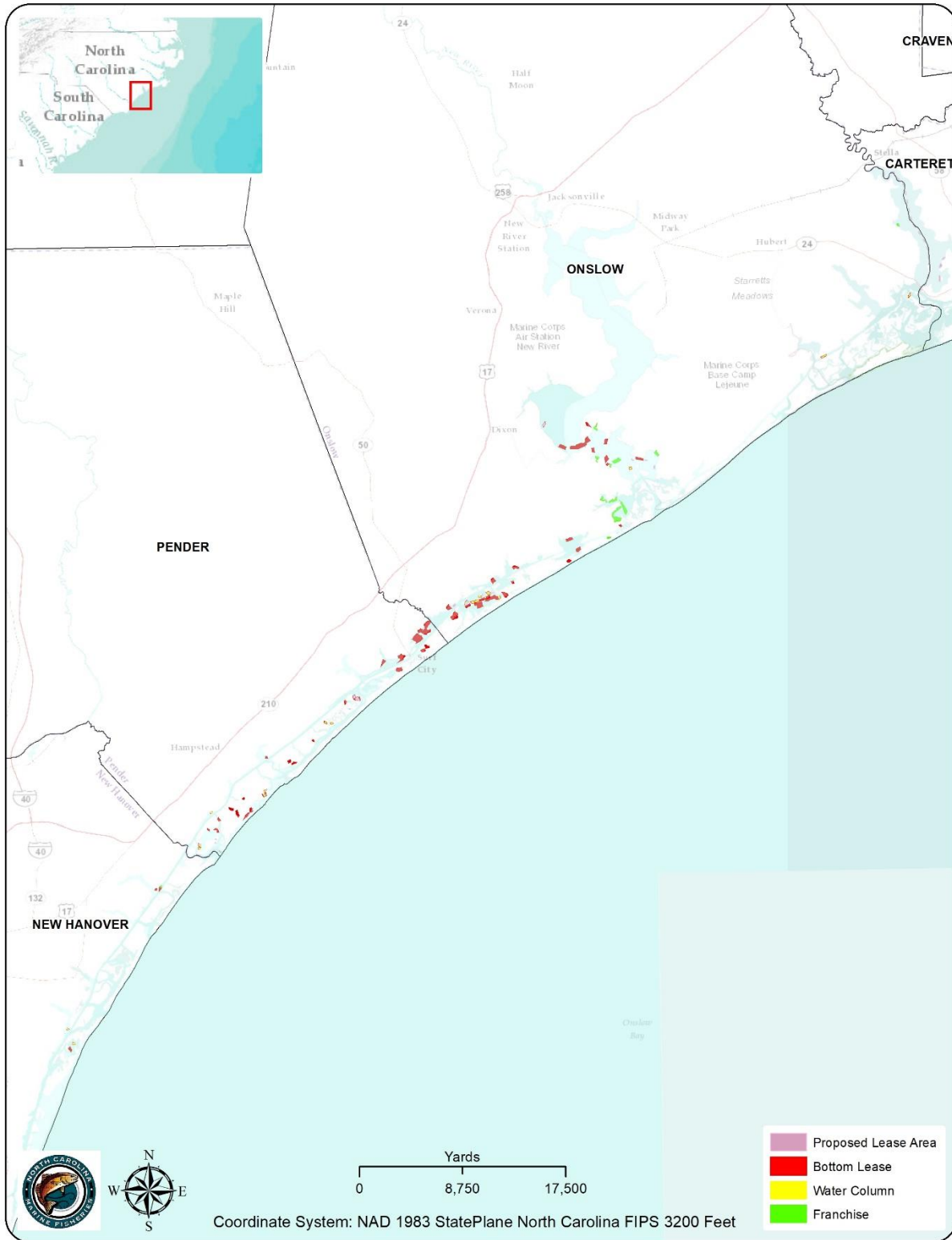


Figure 4. Active and proposed shellfish leases (bottom, water column, and franchise) in the southern region of the state.

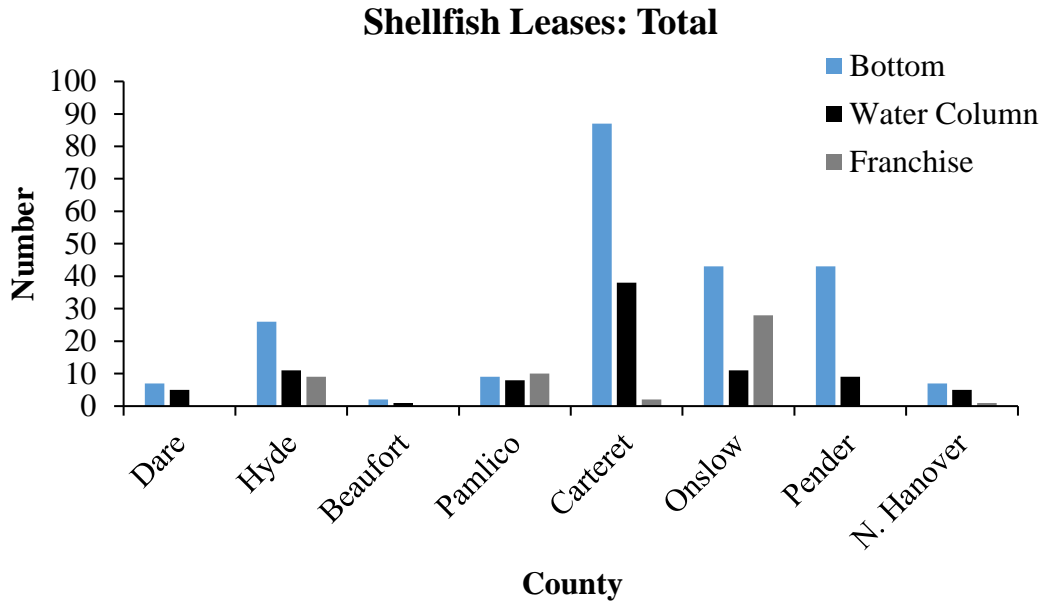


Figure 5. Total shellfish leases (bottom, water column, franchise) in North Carolina by county (north to south) and lease type.

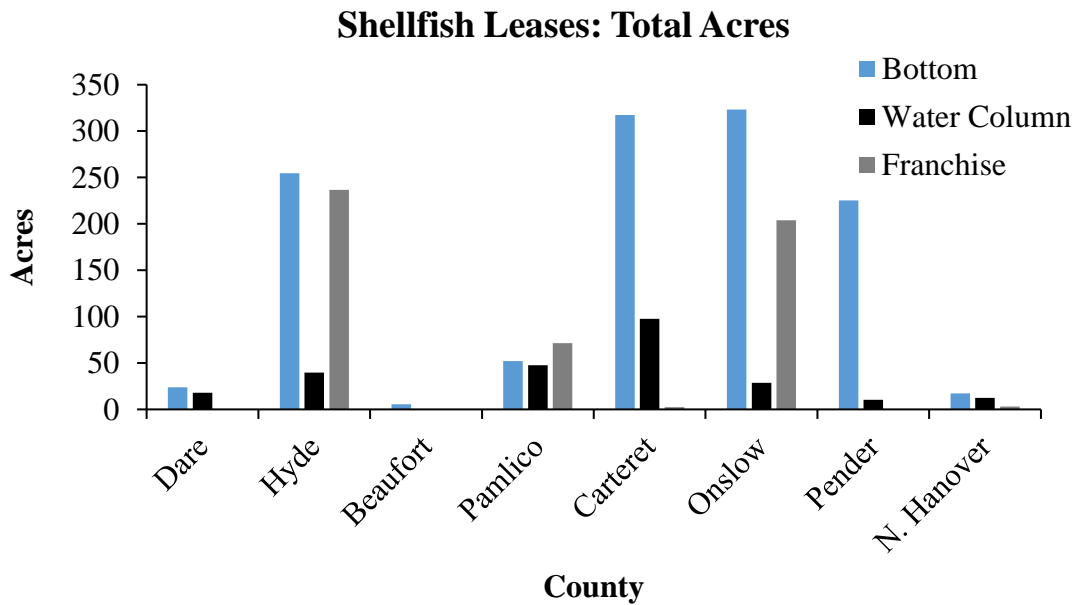


Figure 6. Total shellfish lease acres (bottom, water column, franchise) in North Carolina by county (north to south) and lease type.

DMF grants shellfish aquaculture leases in North Carolina in public trust waters. Public trust resources are land and water areas, whether publicly or privately owned, which are subject to Public Trust Rights as defined under North Carolina law. Public Trust Rights are held in trust by the state for the use and benefit of all citizens of North Carolina in common. Public Trust Rights include, but are not limited to, the right to “navigate, swim, hunt, fish, and enjoy all recreational activities in” North Carolina waters.⁴ Public Trust Rights cannot be conveyed in a manner that adversely affects public trust uses. The General Assembly charged NCDEQ with the stewardship of the public trust marine and estuarine resources of the state. The NCDEQ Secretary may delegate that authority to the DMF Director.⁵

B. Federal Permitting - U.S. Army Corps of Engineers’ Nationwide Permit 48

Permitting for shellfish aquaculture leasing is accomplished both by statute, in part under N.C.G.S. § 113-202, and through the U.S. Army Corps of Engineers’ (“USACE”) Nationwide Permit 48 (“NWP 48”) process - Commercial Shellfish Aquaculture Activities.⁶ The USACE re-issued NWP 48 in 2017. NWP 48 encompasses activities related to commercial shellfish aquaculture in waters of the United States. A recent federal court decision in the State of Washington could have an impact on future use of NWP 48 in North Carolina.⁷ NCDEQ’s Office of the General Counsel will continue to monitor the potential impacts of this decision and any related case law.

C. Increased Review of Shellfish Lease Applications and Resulting User Conflicts

A substantial increase in the number of user conflicts coincides with the recent expansion of the shellfish aquaculture industry and its use of intensive gear in water column leases (Table 2; Figure 1). The General Assembly promulgated several legislative changes affecting the Shellfish Lease Program in recent years in order to help address these conflicts.⁸ The MFC in 2018 also attempted to impose a moratorium for shellfish leases to pause processing of applications long enough to address user conflict issues related to navigation, waterbody carrying capacity, hunting, waterfront development, and applicant experience. Additionally, DMF increased its staff review of shellfish aquaculture lease applications, enlarged notice processes for public hearings on proposed leases, and directed more focus on possible conflicting uses in proposed lease areas. These efforts have resulted in more quality information, both in terms of technical facts and stakeholder opposition, reaching the DMF Director to better inform a decision on whether to grant a shellfish lease application.

The General Assembly’s legislative findings and declaration of policy for cultivation of shellfish in North Carolina states that “shellfish cultivation provides increased seafood production and long-term economic and employment opportunities” and “provides increased ecological benefits to the estuarine environment . . .”⁹ Further, to enhance shellfish cultivation, the policy of the State is to encourage the development of private, commercial shellfish cultivation in ways that are compatible with other public

⁴ N.C.G.S. § 1-45.1

⁵ N.C.G.S. § 113-131(b)

⁶ Nationwide Permit 48 - Commercial Shellfish Aquaculture Activities Effective Date: March 19, 2017; Expiration Date: March 18, 2022 (NWP Final Notice, 82 FR 1860)

⁷ *The Coalition to Protect Puget Sound Habitat v. U.S. Army Corps of Engineers et al.*, No. 17-1209RSL, 2019 WL 5103309 (W.D. Wash. Oct. 10, 2019)

⁸ S.L. 2015-263; S.L. 2017-190; S.L. 2019-37

⁹ N.C.G.S. § 113-201(a)

uses of marine and estuarine resources such as navigation, fishing, and recreation.¹⁰ Enhancing private shellfish cultivation includes granting shellfish cultivation leases that benefit the public interest.¹¹ Minimum standards for compatibility are provided to discern suitable areas for shellfish cultivation based on numerous factors, including but not limited to water quality, ability to cultivate shellfish, existing shellfish resources on the proposed lease, and other public trust uses in the area.¹² Shellfish aquaculture leases can often conflict with public trust uses, which makes balancing these issues and determining compatibility challenging and somewhat subjective.

D. Recent Increase in Legal Challenges to DMF’s Shellfish Lease Decisions

User conflict issues have resulted in an increase in contested cases filed by potentially aggrieved petitioners in the N.C. Office of Administrative Hearings (“OAH”), as well as other legal challenges. The N.C. Department of Justice represents DMF in defending DMF’s shellfish leasing decisions. Many user conflict cases brought by riparian owners adjacent to lease locations seem to be driven by a concern for impairment of view, also known as “viewshed.” Viewshed generally means the natural environment that can be seen from nearby riparian property. Viewshed is not a public trust right traditionally acknowledged under North Carolina common law. Discussion of several recent cases may be helpful in understanding user conflict concerns.

In 2016, a petitioner in Pender County challenged DMF’s denial of a bottom lease and associated water column lease based on findings by DMF that public trust user conflicts would result.¹³ The Administrative Law Judge’s (“ALJ”) decision states:

At issue in this particular contested case is whether or not the proposed shellfish lease is ‘compatible’ with the other uses of the area for navigation, fishing and recreation. Neither the general statutes nor associated Marine Fisheries Commission regulations define or indicate how much use within a proposed lease site must be present in order for the lease to warrant denial as being incompatible with those public uses. There is no definition to define what constitutes the area of the lease, or how it might actually impact navigation, fishing or recreational use. The evidence shows that certain areas close to the proposed site are more heavily used than the exact footprint of the proposed lease site. Fact that there is heavy traffic nearby the proposed lease does NOT necessarily make that area inappropriate for leasing . . . The law does not require an area to be traffic free to be approvable because it would not make any sense and would be an almost impossible requirement to meet. It is the policy of the State of North Carolina to encourage the development of private and commercial shellfish cultivation so long as it is done in a manner compatible with other public uses of the marine and estuarine resources.¹⁴

Ultimately, the ALJ overturned DMF’s denial of the lease application. DMF contemplated appealing the decision to Superior Court, but after further consideration simply decided to issue the lease.

¹⁰ N.C.G.S. § 1-45.1

¹¹ N.C.G.S. § 113-202(a)

¹² *Id.*

¹³ *Ronald Sheffield v. NCDEQ/DMF*, 16 EHR 02397 (Pender County)

¹⁴ *Ronald Sheffield v. NCDEQ/DMF*, 16 EHR 02397 (Pender County)

A second contested case was filed in 2018 by a Homeowner’s Association (“HOA”) located along a nearby shoreline. The appeal challenged DMF’s issuance of a shellfish bottom lease and associated water column lease. The HOA alleged public trust user conflicts, though much of the witness testimony indicated that “viewshed” was the significant concern for the HOA’s members. The ALJ noted that “[o]ne minimum statutory criteria of particular relevance to this case is that ‘[c]ultivation of shellfish in the leased area will be compatible with lawful utilization by the public of other marine and estuarine resources.’”¹⁵ The ALJ went on to state that:

[t]he proper interpretation of a law or rule is a question of law, and an agency interpretation of a statute or rule is not binding on the undersigned. Nevertheless: It is a tenet of statutory construction that a reviewing court should defer to the agency’s interpretation of a statute it administers ‘so [] long as the agency’s interpretation is reasonable and based on a permissible construction of the statute. The phrase ‘compatible with’ under N.C.G.S. § 113-202(a)(3) is not further defined by statute or regulation.’ DMF does not interpret this standard to mean there can be no impact to other public uses. Instead, DMF interprets this minimum standard to mean that existing uses must be able to exist along with the shellfish lease within the general area at the same time.

Ultimately, in upholding DMF’s granting of the shellfish lease, the ALJ stated “that DMF’s interpretation of the phrase ‘compatible with’ is reasonable, is consistent with, and supported by the plain language of the statute and statutory framework.” The ALJ then went further, finding that “[e]ven in the absence of deference, the undersigned independently adopts DMF’s interpretation of this minimum standard. The DMF does not consider impacts on viewshed as a basis for denying a shellfish lease, as this is not a criterion in the relevant statutes or rules pertaining to shellfish leases.”¹⁶

A group of riparian owners brought suit in OAH challenging a shellfish bottom lease and water column lease granted in Myrtle Grove Sound in 2018. The owners claimed the action was brought to “protect the right to a view they are entitled to as a result of their riparian property ownership.”¹⁷ The complaint stated, among other things, that “[o]peration of the commercial shellfish cultivation in the area . . . also has caused significant deterioration in Plaintiffs’ water views, resulting in substantial devaluation of Plaintiffs’ properties.”¹⁸ Ultimately, the dispute was resolved based on an unrelated submerged lands claim issue. As part of the case disposition, the grantee of the previously approved shellfish lease moved his operation to a newly approved lease area in Pender County.

Three additional petitions for contested cases were filed challenging the approval of two shellfish bottom leases and associated water column leases located near each other in Myrtle Grove Sound in 2019. The Petitioners claimed “the leases are incompatible with lawful utilization by the public of other marine and estuarine resources” and that “the right of the public to utilize marine and estuarine resources includes

¹⁵ 8.5 Marina Village John F Matthews VP v. NCDEQ and Samuel G. Boyd, 17 EHR 01382 (Carteret County)

¹⁶ Id.

¹⁷ Hormoze Goudarzi and wife, Suzanne Gourdarzi, Oak Forest Properties, LLC, Billy King and Barbara King v. NCDEQ et al., 18 CVS 1470 (New Hanover Superior Court)

¹⁸ Hormoze Goudarzi and wife, Suzanne Gourdarzi, Oak Forest Properties, LLC, Billy King and Barbara King v. NCDEQ et al., 18 CVS 1470 (New Hanover Superior Court)

the right to view and enjoy species . . . whose habitat Petitioners believe may be threatened by operation of the shellfish leases.”¹⁹ These cases were resolved by virtue of the New Hanover moratorium area established by S.L. 2019-37, Section 7, that went into effect July 1, 2019.

E. DMF’s Shellfish Lease Program is Under-Resourced

North Carolina’s shellfish aquaculture leasing program is implemented by DMF’s Shellfish Lease Program which is currently staff and resources limited. A significantly increasing volume of work may require additional resources. By comparison, other states shellfish aquaculture programs have significant staff and operation funds for administration.

Virginia’s shellfish lease program is staffed by eight dedicated employees, including two managers, one mapper and draftsman, one clerical position and four surveyors. The State of Maine has substantially fewer shellfish leases and acreage than North Carolina but has over six full time positions dedicated to administering its shellfish lease program. The State of Maryland has eight full time positions dedicated to administering its program. DMF believes the Shellfish Lease Program’s small staff and low budget significantly inhibits the industry by increasing the time needed to evaluate whether to grant a lease or defend lease decision appeals. DMF staff believes this delay will be further exacerbated by the mandated but unfunded future studies and directives from the General Assembly in S.L. 2019-37.

III.Sources of Information Concerning User Conflicts

A. Previous Legislative Studies

There have been previous legislative studies concerning shellfish aquaculture over the past few years in North Carolina. Each study has included recommendations for increased resources and positions, regulatory reform, program evaluations, and collaboration. While previous recommendations have been considered, many have not yet been adopted. Details of each report are outlined below.

1. 2016 - Shellfish Aquaculture Plan Report²⁰

The legislatively mandated 2016 Shellfish Aquaculture Plan Report recommended funding four full-time positions and recurring resources to adequately operate the Shellfish Lease Program. The report also included recommendations to form a taskforce comprised of diverse stakeholder and experts from industry, academia, and state agencies in order to develop a comprehensive North Carolina Shellfish Aquaculture Plan. Other recommendations from the report included:

¹⁹ Masonboro Island Club and Gary W. Ahlberg v. NCDEQ/DMF, 19 EHR 00991; Sandra A. Fisher v. NCDEQ/DMF, 19 EHR 00983; John A. Marriott v. NCDEQ/DMF, 19 EHR 01057; The Tides Homeowners Association, Inc. v. NCDEQ/DMF, 19 EHR 01055 (New Hanover County)

²⁰ https://ncseagrant.ncsu.edu/ncseagrant_docs/oysters/DEQ%202016%20Shellfish%20Aquaculture%20Plan%20Report.pdf

- In partnership with N.C. Sea Grant (“NCSG”), develop a detailed proposal for a Shellfish Propagation and Aquaculture Training Program to be enacted with NCSG;
- Modify the initial shellfish bottom lease application fee from \$200 to \$400, which is non-refundable, to help offset the cost of lease administration, mapping and marking;
- Change statutes to allow rent, renewal and production notices to be mailed to lease holders in mid-April to allow previous year production reporting in the division trip ticket program to be finalized. Allow older leases expiring in April to be extended until June 30 to bring all shellfish leases into the same renewal period;
- To simplify the application process for shellfish growers, develop one application and combine the aquaculture permits and package with a shellfish lease;
- Strengthen statutes to increase the penalties for theft on shellfish leases;
- Policy and statutory changes needed to support the recommendations.

2. 2018 - N.C. Strategic Plan for Shellfish Mariculture: A Vision to 2030²¹

The North Carolina Policy Collaboratory (“Collaboratory”) was directed to convene stakeholder meetings in 2016 aimed at advancing efforts to bolster and promote North Carolina’s shellfish industry.²² Legislation was amended, adding a mandate for the Collaboratory to prepare a Shellfish Aquaculture Plan by December 31, 2018.²³ To fulfill the mandates laid out in Senate Bill 257, the Collaboratory formed the Shellfish Mariculture Advisory Committee (“SMAC”) to generate a report of findings and recommendations to the General Assembly. The final report was submitted on December 30, 2018.²⁴

The SMAC’s principal goal was to leverage a broad base of expertise to create a comprehensive plan for the shellfish aquaculture industry while balancing the needs of other citizens of North Carolina who utilize the public trust resources of the coast. The recommendations generated were intended to inform the General Assembly on possible legislative actions that could address many of the current user conflict issues in the industry. The report detailed 21 recommendations including, among others:

- Vision for industry development - Achieve \$100 million annual shellfish mariculture value (\$33 million dockside sales) by 2030;
- Appropriate recurring funding to establish a new section, the Shellfish Leasing Section, at the DMF. Defraying costs of Shellfish Leasing Section: Increase non-refundable shellfish lease application filing fee to \$500 dollars; establish a fee schedule for lease surveys payable to the DMF; shift financial responsibility for advertising for public scoping from agency to the applicant; and increase annual rent;
- Statutory changes - Amend North Carolina General Statute §113-202 to afford the Secretary of the NCDEQ substantial discretion in balancing public trust uses;
- The DMF should designate appropriate tracts as SEAs containing multiple, connected parcels available for shellfish mariculture and managed by the DMF;
- In Pamlico Sound, the Secretary of the NCDEQ should be granted discretion to grant up to three (total) 50-acre (each contiguous) water column or bottom leases, each obtained by a single lease application. These lease tracts must be separated from each other, and from shore, by at least 250 yards. Otherwise, current lease size maximums, including overall acreage possession limits for

²¹ <https://collaboratory.unc.edu/files/2019/01/NC-Strategic-Plan-for-Shellfish-Mariculture-Final-2018.pdf>

²² S.L. 2016-94, Section 14.11.(d)

²³ Senate Bill 257, Section 13.13.(b)

²⁴ North Carolina Strategic Plan for Shellfish Mariculture: A Vision to 2030 (Drs. Joel Fodrie, Charles Peterson, Christine Voss, and Christopher Baillie on behalf of the North Carolina Shellfish Mariculture Advisory Committee)

any single entity, should be retained throughout the state, and no more than three large water column or bottom leases may be established in Pamlico Sound until 2025;

- Increase utilization requirement and strictly monitor and enforce “use it or lose it” policy for shellfish leases;
- Institute higher minimum fines and mandatory restitution for those convicted of stealing or damaging property on shellfish leases. Elevate charges for theft from any contained culture (e.g. cages, bags) or free-on-bottom operation (including clams under netting) to a felony with a minimum fine of \$2,500 and mandatory restitution to the property owner. For those convicted who hold a commercial license, first offenses will result in a one-year loss of license, and second offenses will result in a permanent loss of license;
- Amend North Carolina General Statute §113-203 to allow nursery of shellfish in waters classified as prohibited.

The report addressed the need for further understanding of the ecological and societal implications of shellfish aquaculture which hinder the ability of government agencies to determine where shellfish aquaculture is most suitable. The report explains the need for regionally specific information on social carrying capacity of shellfish aquaculture and other tools to minimize user conflict. While research into the social effects of the expanding shellfish aquaculture industry cannot ensure there will be no user conflict issues, these inquiries can facilitate a better understanding of user conflicts and stakeholder perceptions which ultimately inform lawmakers on future legislation and policy.

Research efforts can help identify social sustainability and conflict resolution approaches that will be important to developing an overall understanding of the relationship of the shellfish aquaculture industry and the surrounding coastal communities. Social carrying capacity is inherently location specific and the amount of shellfish aquaculture that is socially acceptable within an area will vary among regions of the coast.

Another recommendation from the report included appropriate funding and positions for the Shellfish Lease Program. The report recommended recurring funding for three additional full-time equivalent positions for the Shellfish Lease Program. Additionally, the recommendation included increased recurring appropriations to the DMF for the purposes of administering shellfish leasing. The report concluded that additional positions will provide much needed assistance with field operations (e.g. mapping, sampling, and marking leases), a need that will continue to increase as the industry grows and as DMF develops and manages SEAs.

B. Collaboration and Public Outreach

DMF staff has collaborated closely with local stakeholders to help identify and address user conflicts, most recently through the 2018 SMAC process discussed above. DMF has also been working to address user conflict issues with the National Ocean and Atmospheric Administration - National Centers for Coastal Ocean Science specifically on the Bogue Sound Pilot Study which was completed this year. The result of this partnership was a spatial analysis tool and random sampling grids tool used for shellfish lease siting. The Shellfish Lease Program meets with internal DMF reviewers to ensure the lease review process is thorough and efficient. In 2015, DMF also began coordinating with the North Carolina Division of Coastal Management (“DCM”) as a review and commenting agency for shellfish lease

applications, based on their expertise with user conflicts in coastal development. Finally, DMF collaborated with the USACE on the 2017 update of the NWP 48.²⁵

The University of North Carolina Wilmington (“UNCW”) created a tool in 2014 to assist new or current shellfish growers in siting areas for shellfish leases.²⁶ The online tool maintained by UNCW is designed as an interactive decision-support tool to provide information on site suitability when determining potential areas for shellfish leases. The data provided by the tool include salinity, depth, shellfish growing area classifications, boat access areas, surrounding land cover, and current shellfish aquaculture operations.

Public outreach takes place in a variety of ways including numerous presentations to local municipalities, educational institutions, and professional conferences to better inform stakeholder groups and interested parties about the Shellfish Lease Program. For example, DMF is currently collaborating with NCSG and the North Carolina Shellfish Growers Association on regional shellfish aquaculture workshops scheduled for December 3-5, 2019. These workshops are intended to solicit input from shellfish growers about their experiences including user conflicts issues.

DMF staff have also been working on new web-based solutions to more widely inform the public, shellfish growers, potential shellfish lease applicants, and other stakeholders about pending shellfish lease applications to allow for a more robust notification and comment process. DMF staff implemented new temporary marking requirements for proposed shellfish leases to increase visibility to ensure better notification to other area public trust users. DMF staff found that notification efforts beyond those required by the shellfish lease law were helpful in getting more information regarding objections and concerns to property owners and user groups near a proposed lease. Feedback, in turn, provides additional information for the DMF Director to consider as part of a shellfish lease decision.

C. User Conflict Information from Other States

Although the concept of public trust waters somewhat differs among states, the larger user conflict issues created by shellfish aquaculture seems to remain constant. Like North Carolina, most other states which permit shellfish aquaculture require that those operations not unreasonably interfere with other public trust uses. The National Sea Grant College Program in 2019 produced several case studies concerning impediments to shellfish aquaculture across the country.²⁷ DMF looks forward to examining these recent studies to determine if there are approaches and lessons learned elsewhere that could be applied in North Carolina.

²⁵ Nationwide Permit 48 - Commercial Shellfish Aquaculture Activities. Effective Date: March 19, 2017; Expiration Date: March 18, 2022. (NWP Final Notice, 82 FR 1860)

²⁶ <https://uncw.edu/benthic/sitingtool/>

²⁷ Overcoming Impediments to Shellfish Aquaculture through Legal Research and Outreach: Case Studies (National Oceanic and Atmospheric Administration, U.S. Department of Commerce), 2019

1. Leasing Authorities

The leasing of public waters for aquaculture goes through an established public process in all states.²⁸ This public process ensures that concerned stakeholders receive both sufficient notification of proposed leases and an opportunity to raise and address their concerns publicly, though the specifics of these processes vary among states. There are various governmental frameworks among states created to manage the shellfish aquaculture industry. Some states have treated shellfish aquaculture as a form of agriculture, while other states include shellfish aquaculture in agencies managing natural resources.

Numerous states, including Florida, Maine, Maryland, New Jersey, and the Commonwealth of Virginia, have established aquaculture advisory councils which provide managers expert guidance through the council membership. In most states, shellfish applications are processed and decided by the same state-level agency, though Massachusetts and New York make lease decisions at the local level. For example, oyster aquaculture in New York is only approved on private lands or on submerged lands granted by the state to local municipalities which are then charged with developing and managing leasing programs. Similarly, in Massachusetts the city council or mayor of each municipality has authority to issue shellfish aquaculture licenses (or leases). While the aquaculture lease decisions in New York and Massachusetts are made by local municipalities, state and federal statutory requirements are still a large component in determining the policy affecting the industry participants.²⁹

2. Siting Authorities

Siting authorities review proposed lease sites and are tasked with addressing and balancing potential conflicts during the shellfish aquaculture lease application review process.³⁰ Florida, Maryland, New Jersey, and Virginia manage siting bodies that, when reviewing applications, provide notice to applicants if potential issues are identified, and provide recommendations or set conditions on leases if issued. Some states, however, take a more proactive front-end approach, such as Maine and Rhode Island.

In Maine, the Department of Marine Resources mandates that applicants have a pre-application meeting to discuss proposed operations with the Department, harbormaster, and/or the municipal officers of the town in which the applicant wishes to apply. Similarly, in Rhode Island, the Coastal Resources Management Council requires applicants to complete a Preliminary Determination process which involves meeting with regulating agencies, town officials, and the Rhode Island Department of Environmental Management to discuss proposed plans. In both states, meetings allow officials who are familiar with competing uses in the area to advise applicants of potential user conflict issues to give them an opportunity to modify applications before submittal.

²⁸ http://www.ct.gov/deep/cwp/view.asp?a=2705&q=431902&depNav_GID=1622; <https://www.freshfromflorida.com/Divisions-Offices/Aquaculture>; <https://www.maine.gov/dmr/aquaculture>; <http://dnr.maryland.gov/fisheries/pages/aquaculture/index.aspx>; <https://www.capecodextension.org/marine/semac/>; https://www.nj.gov/dep/fgw/pdf/marine/shellfish_leasing_policy_atlantic.pdf; http://assembly.state.ny.us/leg/?default_fld=&bn=A07120&term=2011&Summary=Y&Actions=Y&Votes=Y&Memo=Y&Text=Y; <http://www.shellfishri.com/ri-shellfish-initiative/>; http://www.mrc.state.va.us/Shellfish_Aquaculture.shtm

²⁹ http://www.ct.gov/deep/cwp/view.asp?a=2705&q=431902&depNav_GID=1622; <https://www.freshfromflorida.com/Divisions-Offices/Aquaculture>; <https://www.maine.gov/dmr/aquaculture>; <http://dnr.maryland.gov/fisheries/pages/aquaculture/index.aspx>; <https://www.capecodextension.org/marine/semac/>; https://www.nj.gov/dep/fgw/pdf/marine/shellfish_leasing_policy_atlantic.pdf; http://assembly.state.ny.us/leg/?default_fld=&bn=A07120&term=2011&Summary=Y&Actions=Y&Votes=Y&Memo=Y&Text=Y; <http://www.shellfishri.com/ri-shellfish-initiative/>; http://www.mrc.state.va.us/Shellfish_Aquaculture.shtm

³⁰ *Id.*

3. The Permit Process

The permitting process for shellfish aquaculture leases can be complicated, lengthy and represent a considerable barrier to entry for some potential applicants.³¹ Many states have been dealing with similar issues much longer than North Carolina. To streamline the process, reduce the cost of permitting, and mitigate user conflict issues, states such as Maryland, Florida, Delaware, Massachusetts, New Jersey, New York, and California have established SEAs where state agencies perform aquaculture lease siting, including environmental and public trust suitability review, as well as acquisition of necessary Federal permits. These states then sub-lease smaller parcels within the SEA to shellfish growers. This makes the process more efficient on the back-end, where states only have to verify the suitability of an applicant and issue a permit to operate within those pre-approved SEAs.

Streamlined permitting encourages industry development by shifting the approval burden to the state, eases the state's lease back-end application burden, and helps mitigate user conflict issues. This process also gives individual states greater authority to regulate the activities conducted within the designated area.

4. Shellfish Lease Size and Acre Caps

A common component in user conflicts with shellfish aquaculture revolves around the fear that shellfish aquaculture will eventually take over the majority of a waterbody.³² In New York and Rhode Island, acreage caps have been used to curb fears in areas of high residency and water use. Suffolk County (New York) established an acreage cap of 60 acres that can be leased each year for new leases. In Rhode Island, a maximum of five percent of a coastal salt pond can be leased for shellfish aquaculture. In North Carolina, individual leases are restricted to 10 acres with no more than 50 acres held by an individual or corporation. Beyond size caps and residency requirements, leases are subject to a variety of parameters in different states that limit their expansion such as lease terms, physical restrictions, and other parameters.³³

5. Education

In North Carolina, Carteret Community College offers the Aquaculture Technology Program which provides courses in shellfish aquaculture along with hands on experience working on shellfish farms.³⁴ Currently, North Carolina requires shellfish lease applicants to complete an examination scoring a minimum of 70 percent based on an educational package provided by the DMF. DMF established the examination to demonstrate the applicant's knowledge of:

- Shellfish lease application process;
- Shellfish lease planting and production requirements;
- Lease marking requirements;

³¹ Id.

³² http://www.ct.gov/deep/cwp/view.asp?a=2705&q=431902&depNav_GID=1622; <https://www.freshfromflorida.com/Divisions-Offices/Aquaculture>; <https://www.maine.gov/dmr/aquaculture>; <http://dnr.maryland.gov/fisheries/pages/aquaculture/index.aspx>; <https://www.capecodextension.org/marine/semac/>; https://www.nj.gov/dep/fgw/pdf/marine/shellfish_leasing_policy_atlantic.pdf; http://assembly.state.ny.us/leg/?default_fld=&bn=A07120&term=2011&Summary=Y&Actions=Y&Votes=Y&Memo=Y&Text=Y; <http://www.shellfishri.com/ri-shellfish-initiative/>; http://www.mrc.state.va.us/Shellfish_Aquaculture.shtm

³³ Id.

³⁴ <https://www.carteret.edu/programs/aquaculture-technology/>

- Lease fees;
- Shellfish harvest area closures due to pollution;
- Safe handling practices;
- Lease contracts and renewals;
- Lease termination criteria;
- Shellfish cultivation techniques.

Many states have cooperative extension programs which provide classes and training that introduce potential applicants to the fundamentals of shellfish aquaculture.³⁵ The University of Florida IFAS Shellfish Aquaculture Extension Program, the University of Maryland Extension's Oyster Aquaculture and Education Program, and Southeastern Massachusetts' Aquaculture Center all offer online classes and/or in person workshops to educate potential applicants. These programs are federally funded through the Cooperative State Research, Education, and Extension Service and other federal agencies. Some states such as Virginia, Rhode Island, and Florida have developed mandatory training requirements. These requirements tend to focus on sanitation issues and harvest procedures as they help states comply with the National Shellfish Sanitation Program.³⁶

D. Future Studies and Directives

Future studies and directives mandated by S.L. 2019-37 include: the development of SEAs, potential SEAs in moratorium areas, and a Pamlico Sound Shellfish Aquaculture Pilot Project for a few larger-size leases. These studies require the development and implementation of new methods and procedures for the shellfish lease process. DMF is currently exploring possible ways to complete large-scale shellfish lease investigations required by both the SEA and Pamlico Sound Pilot studies.

Currently, a large-scale shellfish lease investigation would require the effort of the entire Shellfish Lease Program staff for approximately three months leaving no time to review lease applications or perform other work of the program. DMF is exploring the use of drone technology to aid in the lease investigation process and exploring Habitat Suitability Index modeling as a tool for siting shellfish aquaculture leases. DMF is also evaluating various sampling techniques including dredge sampling and using the spatial analysis from the Bogue Sound Pilot Project.

³⁵ http://www.ct.gov/deep/cwp/view.asp?a=2705&q=431902&depNav_GID=1622; <https://www.freshfromflorida.com/Divisions-Offices/Aquaculture>; <https://www.maine.gov/dmr/aquaculture>; <http://dnr.maryland.gov/fisheries/pages/aquaculture/index.aspx>; <https://www.capecodextension.org/marine/semac/>; https://www.nj.gov/dep/fgw/pdf/marine/shellfish_leasing_policy_atlantic.pdf; http://assembly.state.ny.us/leg/?default_fld=&bn=A07120&term=2011&Summary=Y&Actions=Y&Votes=Y&Memo=Y&Text=Y <http://www.shellfishri.com/ri-shellfish-initiative/>; http://www.mrc.state.va.us/Shellfish_Aquaculture.shtm

³⁶ Id.

IV. Recommendations

A multifaceted approach is required to address user conflict issues related to shellfish aquaculture leases in North Carolina. This approach envisions regulatory reform, program evaluation, collaboration, and resource assessment. Previous and current work should be built upon to avoid duplication and expending extra resources.

Existing shellfish lease and franchise statutes³⁷ and rules³⁸ require revisions to effect execution of the recommendations in this study. DMF is drafting suggested revisions to existing shellfish lease statutes and rules to address user conflict issues and incorporate mandated revisions from S.L. 2019-37. The deadline for adoption of rule revisions is March 1, 2021. In discussions with DCM and the North Carolina Coastal Resources Commission (“CRC”) regarding potential user conflict concerns specific to shellfish lease gear and navigation impacts, DMF intends to develop rule language to address these concerns. Recommendations will be made regarding rule revisions based off the findings in this study. Additional recommendations for statute and rule revisions addressing user conflict issues will be developed through the additional studies and directives mandated by S.L. 2019-37.

DMF will evaluate the Shellfish Lease Program and Aquaculture Permitting Program to identify challenges and inefficiencies and recommend ways to improve existing programs. DMF staff believes this focus will result in further modification of internal operating procedures. Areas for further collaboration were identified in this study along with likely participating partners.

Other directives mandated by S.L. 2019-37 include the development and implementation of SEAs similar to those employed by other states. One of the obstacles North Carolina shellfish regulators face is a limited ability to stay informed regarding the aquaculture efforts of other states. DMF recommends collaborating with other states to facilitate a joint interstate discussion. This effort will be of mutual benefit to participating states in compiling and evaluating information relevant to each states’ respective aquaculture regulation and permitting processes.

The Shellfish Lease Program is tasked with implementing the recommendations from this study. It is imperative that DMF have sufficient dedicated staff to manage the program. DMF may not be adequately funded or staffed to implement the recommendations in this study. The lack of funding and dedicated staff significantly inhibits the program’s administrative support for lease holders, drastically increases the

³⁷ N.C.G.S. § 113-201 et seq.

³⁸ 15A NCAC 03O.0201.0211

time to acquire a lease, and impairs the DMF's ability to address user conflict issues efficiently and effectively. The additional legislative mandates put further burden on the already limited amount of staff and resources of the Shellfish Lease Program. DMF will evaluate current staff and funding levels of the Shellfish Lease Program to estimate the resources needed for the program to implement the recommendations of this study.

A. Recommendation #1: Regulatory Reform

- Incorporate riparian area owner notification standards to include certified mail notification (15A NCAC 03O.0201);
- Add language to include MFC's authority to limit total acres leased in a waterbody (15A NCAC 03O.0201);
- Add a 250 feet setback requirement between any shellfish leases (15A NCAC 03O.0201(a));
- Modify the setback requirement of 100 feet from a developed shoreline to 250 feet to help alleviate user conflict with riparian owners (15A NCAC 03O.0201(a)(3));
- Modify marking requirements for shellfish leases and franchises to include a maximum of eight corner lease corner markers and additional requirements to ensure visibility to alleviate navigation concerns. More noticeable shellfish lease markings have been a safety concern (15A NCAC 03O.0202(b); 15A NCAC 03O.0204);
- Modify training requirements for shellfish lease applicants to include information about user conflicts and the public trust (15A NCAC 03O.0202(d));
- Add administrative remedy language from statute (15A NCAC 03O.0206);
- Add clearance requirement of three feet between the top of the cage and the water level at mean low tide to the amended shellfish leasing statute allowing the use of gear up to 18 inches off of the bottom (N.C.G.S. § 113-202(r)).

B. Recommendation #2: Program Evaluation

- Best management practices for the industry should be practiced and publicized, best available science should be incorporated into the permitting process, and stakeholders should work together to collect data and analyze facts to reach shared decisions on the user conflict issues;
- Synchronize all reporting and renewal requirements for shellfish leases and aquaculture permits.

C. Recommendation #3: Collaboration

- Form an interstate aquaculture workgroup and have an in-person meeting;
- Create an inventory with aquaculture information from each state, including site selection, permitting, public trust issues, business planning and economics, seed and nursery options, grow out methods and equipment, consumer safety and marketing;
- Develop a standing interstate aquaculture workgroup in partnership with NCSG with adequate funding and support;
- In partnership with NCSG, continue developing a Shellfish Aquaculture Training Program.

D. Recommendation #4: Resource Assessment

- Evaluate the Shellfish Lease Program's staff and funding levels to determine whether they are adequate to administer the current and increasing volume and complexity to similar levels of other state's aquaculture programs.

