



SHELLFISH LEASE REGULATION IN HIGH USE AREAS



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MEMORANDUM

TO: N.C. Marine Fisheries Commission

FROM: Jacob Boyd, Section Chief
Habitat Enhancement Section

SUBJECT: Shellfish Lease User Conflict Reduction Update

Issue

The Division of Marine Fisheries will present user conflict reduction information to and seek input for further action from the N.C. Marine Fisheries Commission (MFC) based on the concentration of shellfish leases in the state's waterbodies that are identified as high use areas (HUA).

Action Needed

The DMF is seeking input from the MFC about proceeding with the development of caps to limit shellfish lease acreage in identified HUAs, as well as other areas the MFC may want to include.

Findings

- The MFC passed a motion at their August 2020 meeting asking the N.C. Division of Marine Fisheries (DMF) to study the concentration of shellfish leases in given water bodies and bring recommendations on potential user conflicts to the February 2021 meeting.
- Shellfish leases can often conflict with public trust uses, which makes balancing these issues and determining compatibility challenging and somewhat subjective.
- A multifaceted approach is required to address user conflict issues related to shellfish leases in North Carolina.
- Multiple sources of authority govern the responsibilities of the MFC and the Department of Environmental Quality (DEQ) for development of private, commercial shellfish leases in ways that are compatible with other public uses of marine and estuarine resources such as navigation, fishing, and recreation.
- One of these grants authority to the MFC to adopt rules to limit the number of acres in any area that may be granted as shellfish leases to assure the public that some waters will remain open and free from shellfish lease activities.
- Other states have developed acreage limits, in consultation with the fishing industry and other regulatory agencies and stakeholders, as a management tool for shellfish leases.
- Available GIS data, such as current acreage of leased waters and closed shellfish growing areas, can inform decisions about limiting shellfish lease acreage.

MFC Authority

North Carolina General Statute (N.C.G.S.) § 113-201 (“Legislative findings and declaration of policy; authority of MFC”) details the General Assembly’s legislative findings and declaration of policy for cultivation of shellfish in North Carolina. N.C.G.S. § 113-201 provides that “shellfish cultivation provides increased seafood production and long-term economic and employment opportunities” and “provides increased ecological benefits to the estuarine environment . . .”. Areas leased for private shellfish cultivation purposes are commonly referred to as shellfish aquaculture or shellfish leases. To enhance shellfish cultivation, the policy of the state is declared to encourage the development of private, commercial shellfish cultivation in ways that are compatible with other public uses of marine and estuarine resources such as navigation, fishing, and recreation. The MFC is empowered to make rules and take all steps necessary to develop and improve shellfish aquaculture. The MFC has the authority to adopt rules to limit the number of acres in any area that may be granted as shellfish leases to assure the public that some waters will remain open and free from shellfish lease activities.¹

In addition to the authority granted in N.C.G.S. § 113-201, N.C.G.S. § 113-202 (“New and renewal leases for shellfish cultivation; termination of leases issued prior to January 1, 1966”) sets the minimum standards for compatibility to discern suitable areas for shellfish leases based on a number of factors, including but not limited to water quality, ability to cultivate shellfish, existing shellfish resources on the proposed shellfish lease, and other public trust uses in the area. N.C.G.S. § 113-202 also provides the MFC authority to adopt rules to define the commercial production of shellfish.²

The corresponding MFC rules can be found in 15A NCAC 03K and 15A NCAC 03O .0200. Changes to three of these rules are underway and others are in development to satisfy requirements of Session Law (S.L.) 2019-37 and the N.C. Administrative Procedure Act at N.C.G.S. § 150B-21.3A (“Periodic Review and Expiration of Existing Rules”).³ The MFC powers and duties include the power and duty to establish standards and adopt rules to manage the leasing of public grounds for mariculture, including oysters and clam production, as provided in N.C.G.S. § 113-202.⁴

Multiple sources of authority govern the responsibilities of the MFC and the DEQ for development of private, commercial shellfish leases in ways that are compatible with other public uses of marine and estuarine resources such as navigation, fishing, and recreation. One of these grants authority to the MFC to adopt rules to limit the number of acres in any area that may be granted as shellfish leases to assure the public that some waters will remain open and free from shellfish lease activities.⁵ In addition, the General Assembly has implemented changes and required several studies over the past few years for managing the shellfish aquaculture industry and the resulting user conflicts. These studies include the 2016 Shellfish Aquaculture Plan Report, the 2018 N.C. Strategic Plan for Shellfish Mariculture: A Vision to 2030 (“Plan”), and the 2019 joint DMF-MFC User Conflict Study (“Study”).^{6,7,8}

¹ N.C.G.S. § 113-201

² N.C.G.S. § 113-202

³ <https://www.ncleg.gov/EnactedLegislation/SessionLaws/PDF/2019-2020/SL2019-37.pdf>

⁴ N.C.G.S. 143B-289.52(b)(7)

⁵ N.C.G.S. § 113-201

⁶ https://ncseagrant.ncsu.edu/ncseagrant_docs/oysters/DEQ%202016%20Shellfish%20Aquaculture%20Plan%20Report.pdf

⁷ 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)

⁸ 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), 2019

In 2019, the General Assembly passed the shellfish aquaculture bill in S.L. 2019-37, which included the Study that describes the complicated and often lengthy permitting process now in place in North Carolina for shellfish leases.⁹ Separate studies and directives mandated by S.L. 2019-37 include: the development of Shellfish Enterprise Areas (SEAs) and potential SEAs in moratorium areas, and the Pamlico Sound Shellfish Aquaculture Pilot Project for a few larger-size shellfish leases. These studies require the development and implementation of new methods and procedures for the shellfish lease application process. A brief overview of the MFC’s authority and responsibilities for shellfish leases is provided in Table 1.

Table 1. Overview of the North Carolina Marine Fisheries Commission’s (MFC) authority and responsibilities for shellfish leases.

Law	Title
N.C.G.S. § 113-201	Legislative findings and declaration of policy; authority of MFC
N.C.G.S. § 113-202	New and renewal leases for shellfish cultivation
N.C.G.S. § 143B-289.52	MFC – powers and duties
S.L. 2019-37	Provide further support to the shellfish aquaculture industry

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 leases seem to remain constant. The Study summarized user conflict information from other states including providing background information on how other states manage shellfish leases. The following is a synopsis of the background information provided in the Study.¹⁰

Many states have been facing similar user conflict issues much longer than North Carolina. The leasing of public waters for shellfish leases goes through an established public process in all states. This public process ensures that concerned stakeholders receive both sufficient notification of proposed shellfish leases and an opportunity to raise and address their concerns publicly, though the specifics of these processes vary among states. Like North Carolina, other states require shellfish leases to not unreasonably interfere with other public trust uses. Siting authorities review proposed shellfish lease sites and are tasked with addressing and balancing potential user conflicts during the shellfish lease application review process.

However, some states take a more proactive front-end approach. In Maine and Rhode Island, for example, applicants must have a pre-application meeting with regulating agencies and town officials to discuss proposed shellfish lease operations. 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.

A common element of user conflicts with shellfish leases revolves around the fear that shellfish leases will eventually take over the majority of a waterbody. In New York and Rhode Island, acreage caps have been used to address these concerns 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

⁹ <https://www.ncleg.gov/EnactedLegislation/SessionLaws/PDF/2019-2020/SL2019-37.pdf>

¹⁰ 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), 2019

shellfish leases. Rhode Island, in consultation with the fishing industry and other regulatory agencies and stakeholders, implemented a maximum of five (5) percent of a coastal salt pond that can be leased for shellfish aquaculture. This was based on a calculated ecosystem carrying capacity but has been used as a de facto social carrying capacity tool. While ecosystem carrying capacity describes the maximum population an area can sustain in biological terms, social carrying capacity describes the maximum amount of use (i.e., recreational, commercial, industrial) an area can sustain in terms of social acceptance. New York included a review period that automatically initiated review of the acreage limits after 10 years to determine if they were still appropriate. Beyond size caps and residency requirements, shellfish leases are subject to a variety of parameters in different states that limit their expansion. These requirements include various shellfish lease terms and physical restrictions.

The Study also referenced the 2018 - N.C. Strategic Plan for Shellfish Mariculture: A Vision to 2030 (“Plan”) that provided recommendations to inform the General Assembly on possible legislative actions that could address many of the current user conflict issues surrounding shellfish leases.¹¹ The Plan detailed research showing that further understanding is needed of the societal implications of shellfish leases that hinder the ability of government agencies to determine where shellfish leases are most suitable. Other needs include regionally specific information on social carrying capacity of shellfish leases 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 inform decision makers and facilitate a better understanding of user conflicts and stakeholder perceptions. Research efforts help identify social sustainability and conflict resolution approaches that are 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 because coastal counties and waterbodies can be drastically different from one another, the number of shellfish leases that is socially acceptable within an area will vary among regions.

Current/Ongoing Efforts

The DMF is currently working to implement numerous recommendations from multiple studies mandated by the General Assembly to enhance existing procedures for managing the shellfish aquaculture industry and the resulting user conflicts. These studies and directives include:

1. User Conflict Study;
2. Shellfish Aquaculture Enterprise Areas (SEAs);
3. SEAs: Moratorium Areas Study;
4. Pamlico Sound Shellfish Aquaculture Pilot Project; and
5. Administrative Remedy for Shellfish Leasing Appeals.

DMF is exploring possible ways to complete large-scale shellfish lease investigations required by both the SEA and Pamlico Sound Pilot studies. The DMF also continues to develop changes to existing shellfish lease rules to address user conflict issues and other requirements of S.L. 2019-37. User conflict issues must be approached holistically by 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, and business planning, marketing, and training.

¹¹ 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)

Existing Data/Methodology to Calculate Available Acres

Shellfish leases are divided into two types: bottom and water column. A leaseholder must have a shellfish bottom lease to have a shellfish water column lease. The shellfish water column lease can be granted over the entire footprint of a shellfish bottom lease, or on a portion of the lease. The main objective when calculating total acres leased is to determine the amount of bottom leased for shellfish aquaculture. Therefore, when calculating leased acres in a waterbody, only the footprint of the shellfish bottom lease is used. Because a shellfish water column lease is directly over a shellfish bottom lease, those acres are not included in calculating total acres leased in a waterbody to avoid inflation.

At its August 2020 meeting, the MFC asked DMF staff to study the concentration of shellfish leases in water bodies and bring back recommendations to limit shellfish lease acreage in identified HUAs. These areas are waterbodies/areas where the number of shellfish leases and shellfish lease applications have increased to the point of taking up large portions of available space and/or causing increased user conflicts. Based on available information, DMF staff determined initial HUAs throughout the state and calculated the approximate number of acres that were available for shellfish leases within these HUAs (Table 2). These leasable area calculations are based on the same criteria that are used when reviewing initial shellfish lease applications.

These criteria are the minimum standards established by the General Assembly as set forth in N.C.G.S. § 113-202 and by the MFC in 15A NCAC 03O .0200. As a first step, the minimum standards are used to identify suitable areas for shellfish leases based on numerous factors, including water quality, ability to cultivate shellfish, submerged aquatic vegetation (SAV), and existing shellfish resources on the proposed area. The resulting calculation includes only acres that are considered leasable based on definitive data/information (Table 3). Next, other factors, including federal permitting requirements (i.e., U.S. Army Corps of Engineers (USACE) Nationwide Permit (NWP) No. 48: Regional Conditions) must be considered to determine if a shellfish lease can be sited and how many potential shellfish leases can be sited in a specific area (Table 4).¹² These other factors cannot be estimated and are considered on a case-by-case basis during the shellfish lease application process under the authority of the shellfish lease statutes and rules and federal requirements.

To illustrate this concept, DMF staff calculated total acres for Stump Sound (847 acres), which is identified as an HUA (Table 5). For the first step, areas in which a shellfish lease cannot be placed based on the definitive data/information (i.e., SAV, navigation channels, closed areas, current/proposed shellfish leases) were excluded (Figure 1). This was compared to the number of acres currently leased (120 acres or 14% of the waterbody) to calculate the potential number of leasable acres still available to be leased (586 acres or 69% of the waterbody; Table 5; Figure 2). To complete the exercise, a proposed shellfish lease would be considered on a case-by-case basis for siting requirements to determine if the proposed shellfish lease can be sited in a particular portion of the area in question.

Included in the changes to three of the shellfish lease rules that are underway is a new requirement to add a 250-foot buffer between shellfish leases. Currently, there are no buffer requirements between shellfish leases. The 250-foot buffer will enhance navigation between and around shellfish leases and was developed based on existing USACE NWP No. 48 setback requirements for U.S. Coast

¹² Nationwide Permit 48 - Commercial Shellfish Aquaculture Activities Effective Date: March 19, 2017; Expiration Date: March 18, 2022 (NWP Final Notice, 82 FR 1860)

Guard navigation aids. To demonstrate this, the 250-foot buffer between shellfish leases was added to the data layers used in the previous illustration where a shellfish lease cannot be placed (311 acres or 37% of the waterbody; Table 5; Figure 3). The potential number of leasable acres was recalculated to include the 250-foot buffer (410 acres or 48% of the waterbody; Table 5; Figure 4). Further, to demonstrate how a proposed shellfish lease would be considered on a case-by-case basis for siting requirements in Stump Sound, two new simulated shellfish leases were added to the data layers used in the previous illustration that included the 250-foot buffer between shellfish leases (339 acres or 40% of the waterbody; Table 5; Figure 5). The two new simulated shellfish lease sites were determined based on the average size of the current shellfish leases in the area (Figure 5). The potential number of leasable acres was recalculated to include the two new simulated shellfish leases (369 acres or 44% of the waterbody; Table 5; Figure 6).

It is important to note that while limiting shellfish acres in identified HUAs may help alleviate user conflicts within the HUAs, it could end up shifting effort away from the HUAs to areas that are not currently HUAs but would become so. In some identified HUAs, shellfish leases may be self-limiting and acreage caps may not yield the intended effect.

Table 2. High use areas.

County	Waterbody
Onslow County	New River
	Stump Sound (Mainland Areas, Permuda Island Bay, Seaside Areas)
	Topsail Sound (Mainland Areas)
Pender County	Topsail Sound (Mainland Areas, Waters Bay, Banks Channel, Seaside Areas, Green Channel)
Carteret County	Newport River

Table 3. Data layers used in calculating the amount of available leasable acres.

Number	Data Layers
1	Current and proposed shellfish leases and franchises
2	Research sanctuaries
3	250' from developed shoreline
4	20' from undeveloped
5	Submerged aquatic vegetation (SAV)
6	Cultch planting sites
7	Oyster Sanctuaries
8	Seed Oyster Management Areas (SOMA)
9	Shellfish Growing Areas (SGA) – closed
10	Military Restricted Area & Danger Zones
11	Submerged Lands Claims (SLC)
12	Moratoriums
13	Pound nets
14	Intracoastal Waterway (ICW) - 250' buffer
15	National Estuarine Research Reserve (NERR)/DCM Coastal Reserve Boundary
16	National Park Service
17	US Fish and Wildlife Service Lands
18	Other permitted restoration areas

Table 4. Other factors used when siting a shellfish lease.

Number	Other Factors
1	Natural shellfish in area (shellfish bottom mapping)
2	250' buffer between shellfish leases
3	USACE NWP No. 48: Regional Conditions - 1/3 waterbody, 250' navigational aids, not in USACE setbacks or marked/unmarked channels
4	User conflicts
5	Shellfish Enterprise Areas (SEAs)

Table 5. The total number of acres and percent of waterbody for Stump Sound including current shellfish leases, current shellfish leases with a 250-foot buffer, and simulated new shellfish leases with a 250-foot buffer.

	With 250' Buffer						
	Figure 1	Figure 2		Figure 3	Figure 4	Figure 5	Figure 6
	Stump Sound	Current Shellfish Leases	Potential Leasable Area	Current Shellfish Leases	Potential Leasable Area	Simulated New Shellfish Leases	Remaining Potential Leasable Area
Acres	847	120	586	311	410	339	369
Percent	N/A	14%	69%	37%	48%	40%	44%

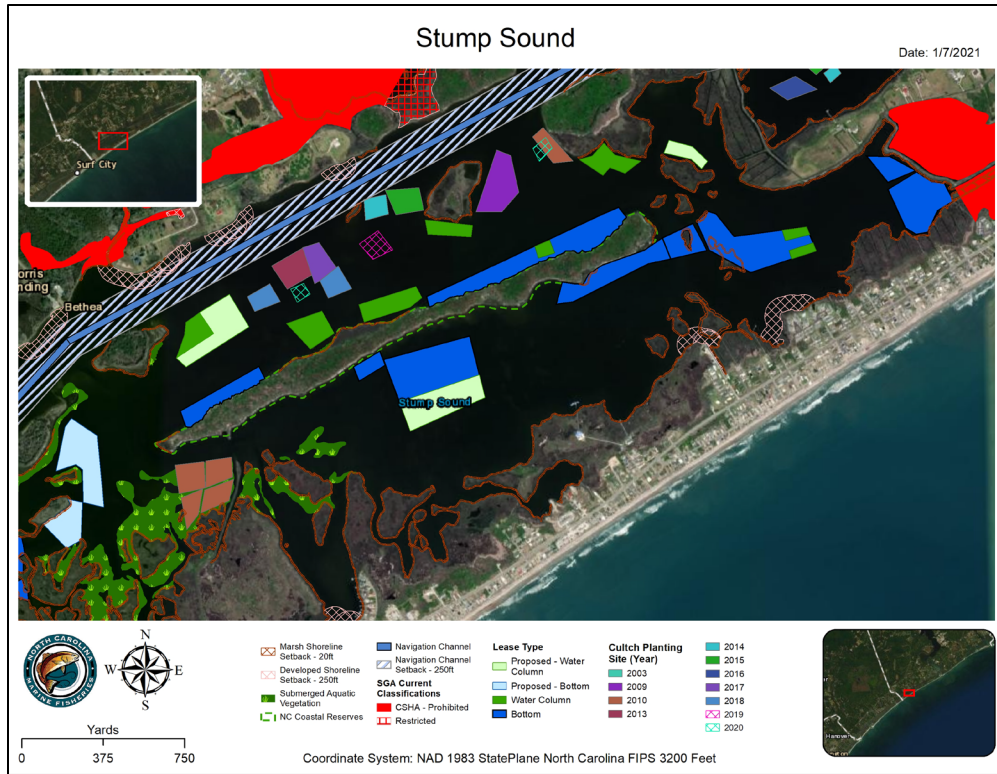


Figure 1. Stump Sound including all the data layers used to determine the number of potential leasable areas.

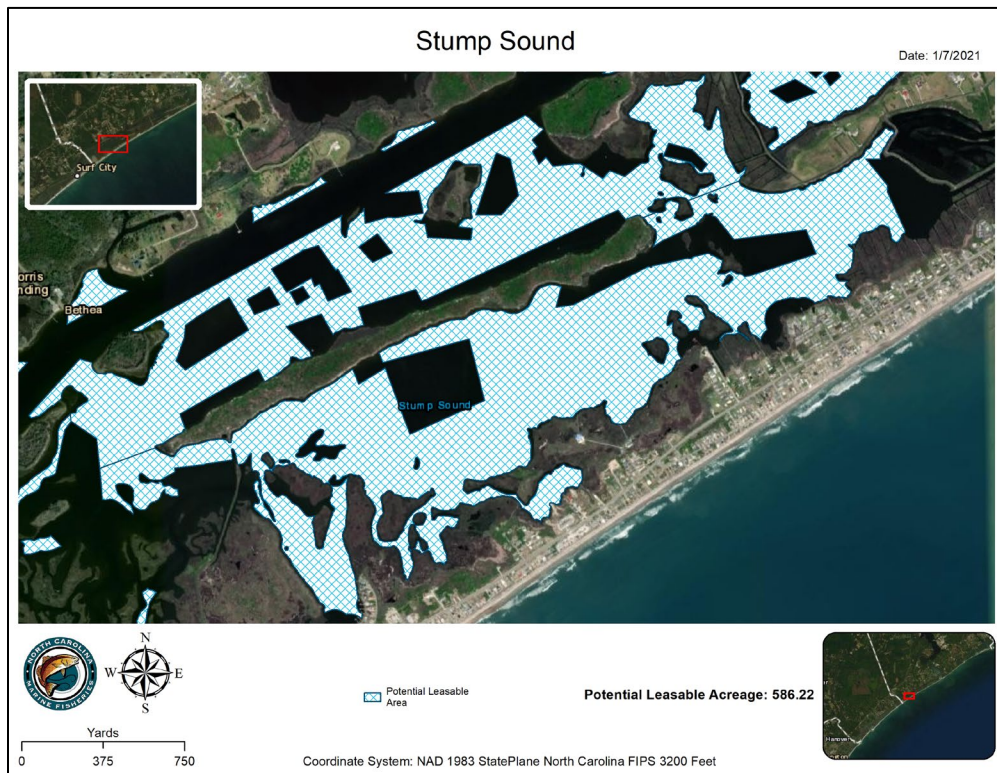


Figure 2. Stump Sound total potential leasable acres.

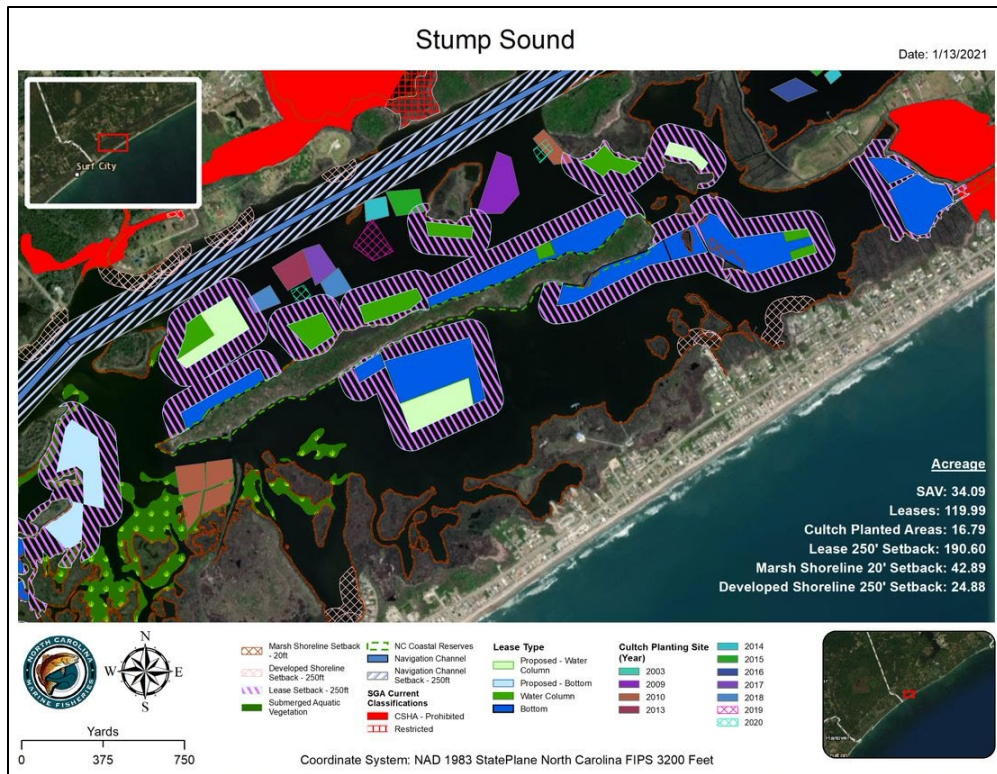


Figure 3. Stump Sound with data layers including the 250-foot buffer between shellfish leases used to determine the number of potential leasable areas.

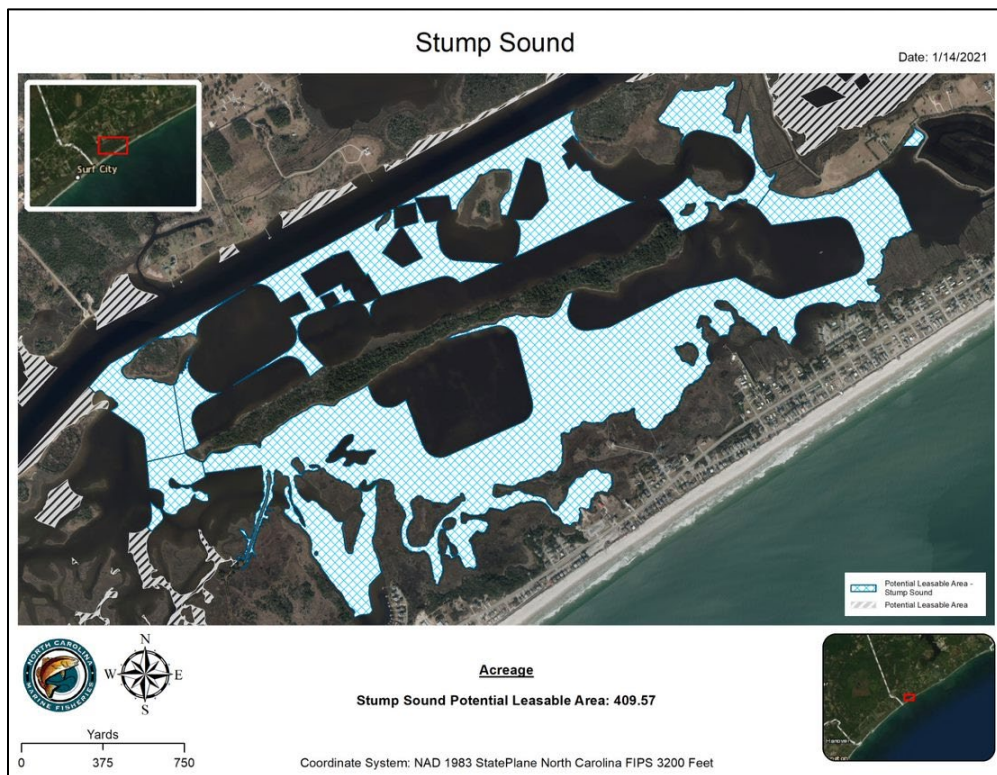


Figure 4. Stump Sound total potential leasable acres including the 250-foot buffer between shellfish leases.

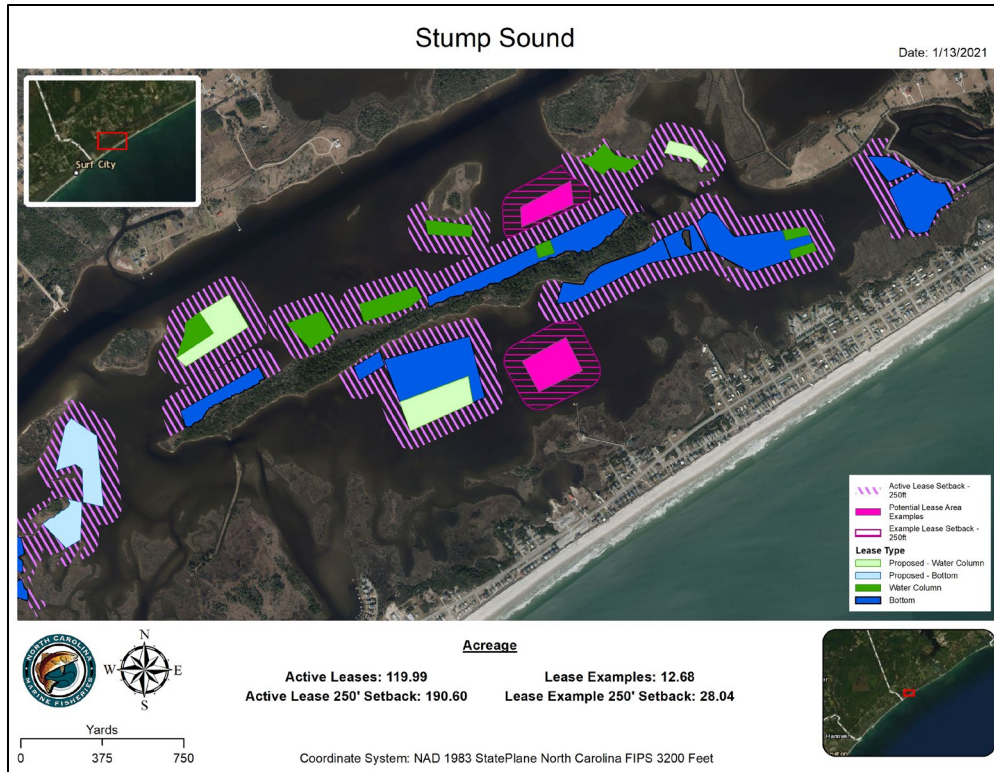


Figure 5. Example of two new simulated shellfish leases sited in Stump Sound with data layers including the 250-foot buffer between shellfish leases used to determine the number of potential leasable areas.

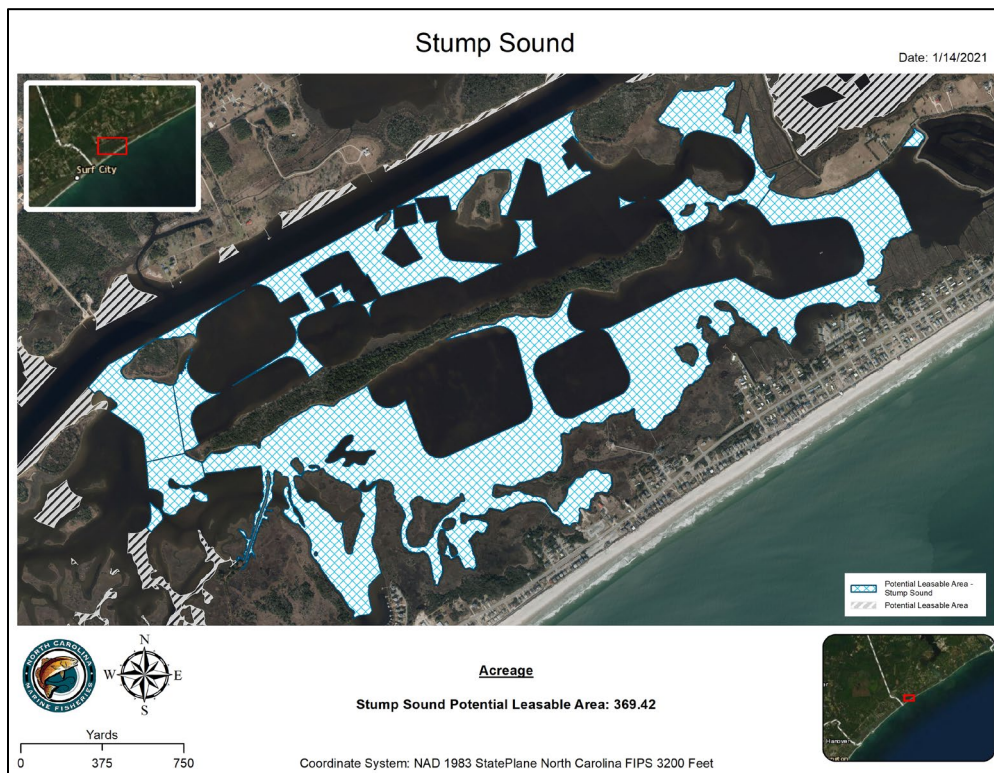


Figure 6. Example of two new simulated shellfish leases sited in Stump Sound and the total potential leasable acres including the 250-foot buffer between shellfish leases.

Recommendation

The use of acreage caps is a potential tool for managing shellfish leases and the effectiveness will vary depending on the particular geographic area along the coastline. Other states have developed acreage caps in consultation with the fishing industry, regulatory agencies, and stakeholders. Available GIS data, such as current acreage of leased waters and closed shellfish growing areas, can inform decisions about limiting shellfish lease acreage. The DMF is currently working to implement numerous recommendations from multiple studies mandated by the General Assembly to enhance existing procedures for managing the shellfish aquaculture industry and the resulting user conflicts.

If the MFC develops rules to implement caps to limit shellfish lease acreage in HUAs, the DMF recommends involving the public and other stakeholders from the beginning of the process to foster stakeholder buy-in, more readily address concerns before rules are implemented, and maintain transparency in the regulatory process. The DMF also recommends exploring the use of an automatic review period (i.e., sunset clause) to be included in any potential rule language to allow the opportunity to reevaluate the HUAs to assess the ongoing appropriateness and identify any new HUAs. User conflict issues must be approached holistically by 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, and business planning, marketing, and training.

Input Needed from MFC

If the MFC wants to proceed with the development of rules to limit shellfish lease acreage in HUAs, the DMF requests the following input:

- Feedback on areas identified as HUAs;
- Other geographic areas of concern to examine further as potential HUAs; and
- Entities to include for soliciting stakeholder input, such as MFC advisory committees and industry groups.

Next steps could include the DMF developing an issue paper with proposed rules and presenting it to MFC advisory committees, industry groups, and other stakeholders to solicit stakeholder input. This information could then be brought to the MFC for selection of its preferred management option, development of the required fiscal analysis, and presentation to the MFC to begin the rulemaking process.

If the MFC does not support proceeding with the development of rules at this time, there are numerous measures in place and forthcoming to address shellfish lease user conflicts. It is a viable option to allow time for the previous studies and mandates to be fully implemented and the benefits to be realized before promulgating additional requirements for the management of shellfish leases.