

May 2021 Revision
to
Amendment 1
to the
North Carolina Shrimp
Fishery Management Plan

Prepared by the

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Executive Summary

The shrimp fishery in North Carolina consists of three primary shrimp species (brown, pink, and white). In 2018, shrimp was the most economically valuable commercial fishery in North Carolina with an ex-vessel value of \$20,047,148. Amendment 1 to the Shrimp Fishery Management Plan (FMP) was developed to address bycatch in the commercial and recreational shrimp trawl fishery as well as the development of a live bait shrimp fishery. In February 2015, the North Carolina Marine Fisheries Commission (MFC) adopted Amendment 1 recommending a wider range of certified bycatch reduction devices (BRDs) for use with trawls, requiring two bycatch reduction devices in shrimp trawls and skimmer trawls, increasing the daily harvest limit for cast nets in closed areas, and allowing live bait fishermen to fish until noon on Saturdays. In accordance with Amendment 1, as an adaptive management measure, the MFC also formed a Shrimp Bycatch Reduction Industry Workgroup (workgroup) to develop different gear configurations to reduce bycatch to the greatest extent practicable with a 40 percent target reduction. The May 2018 Revision to Amendment 1 to the N.C. Shrimp FMP describes results of gear testing, industry workgroup recommendations and the MFC preferred management strategy and rules. With the adoption of Amendment 1, the MFC also recommended that the Habitat and Water Quality Advisory Committee (AC) provide input on changing the designation of certain Special Secondary Nursery Areas (SSNAs) that have not been opened to trawling since 1991 to permanent Secondary Nursery Areas (SNAs). Due to overlapping issues associated with petitions for rulemaking related to nursery area designations and shrimp management the development of this management measure was delayed.

An issue paper with the Habitat and Water Quality AC recommendation to change the designation of SSNAs identified in Amendment 1 to permanent SNAs was presented to the NCMFC at its February 2020 business meeting. This document serves as the 2021 Revision to Amendment 1 to the N.C. Shrimp FMP. It documents the supporting data and rationale for changing the designation of SSNAs in Pungo, Scranton, Slade, South, Bond/Muddy, and Saucepan creeks as well as the Newport, Cape Fear and Lockwood Folly rivers to permanent SNAs. Rule changes for this revision are scheduled to be effective May 1, 2021. All other management strategies contained in Amendment 1 and the May 2018 Revision to Amendment 1 will remain unless a another revision, supplement, or amendment to the N.C. shrimp FMP is adopted.

I. ISSUE

The consideration of changing the designation of special secondary nursery areas (SSNAs) that have not been opened to trawling since 1991 to permanent secondary nursery areas (SNAs)

II. ORIGINATION

The North Carolina Shrimp FMP Amendment 1 and the North Carolina Marine Fisheries Commission (MFC)

III. BACKGROUND

In February 2015, the Shrimp FMP Amendment 1 and its rules were adopted by the MFC. The focus of Amendment 1 was to address bycatch in the commercial and recreational shrimp fishery (NCDMF 2015a). Management options examined in the FMP were separated into 1) gear modifications; 2) effort management; 3) area restrictions; and 4) the use of other fishing gears. For each of these management options, issue papers were developed and presented to the Shrimp FMP Advisory Committee (AC), as well as the regional and standing advisory committees of the MFC. Area restrictions to reduce shrimp trawl bycatch were evaluated for all internal coastal waters, Pamlico Sound and its adjacent tributaries, SSNAs, and portions of Brunswick County. With the adoption of Amendment 1, shrimp trawling was prohibited in the Intracoastal Waterway (IWW) channel from Sunset Beach to the South Carolina state line, including Eastern Channel, lower Calabash River and Shallotte River, and was supported by both the Division and Shrimp FMP AC. Prior to the adoption of Amendment 1, these areas were not opened for 10 to 12 years due to the abundance of small fish and shrimp. In addition to the area closure, the MFC also recommended that the MFC Habitat and Water Quality Advisory Committee (AC) provide input on changing the designation of certain SSNAs that have not been opened to trawling since 1991 to permanent SNAs. This recommendation was also supported by the Division and adopted by the MFC. The Shrimp FMP AC did not provide a recommendation for this management option.

A petition for rulemaking was submitted to the Marine Fisheries Commission in November 2016 that potentially overlapped with the issue of changing the designation of SSNAs and a second petition was submitted in May 2019. Due to continuing petition issues, rule action was held until the petitions were resolved. Both rulemaking petitions have been resolved and neither one resulted in rulemaking. To comply with the selected action on this issue in Shrimp FMP Amendment 1 this Issue Paper was drafted and begins the process for rule consideration as part of the 2020-2021 rule cycle.

Primary nursery areas (PNAs), SNAs, and SSNAs are defined in MFC Rule 15A NCAC 03I .0101 and designated in 15A NCAC 03R .0103, .0104, and .0105. It is unlawful to use any trawl net, long haul seine, swipe net, dredge, or mechanical method for clams or oysters for the purpose of taking any marine fishes in PNAs. In SNAs, it is unlawful to use trawl nets for any purpose. However, in SSNAs the Fisheries Director, may, by proclamation, open any or all of the SSNAs, or any portion thereof to shrimp or crab trawling from August 16 through May 14. The intent of these rules and proclamations is to protect nursery habitat for young finfish and crustaceans as well as developing sub-adults. By allowing limited trawling in SSNAs, fishermen are allowed to catch shrimp late in the season that have not migrated out into the larger estuaries. The opening and closing of SSNAs is based on the size and abundance of shrimp and finfish. The division conducts regular sampling to monitor shrimp size and abundance as well as the abundance of bycatch if the area is being considered for opening. Target sizes (count of shrimp per pound

heads-on) differ by waterbody within the state to account for variability of boat sizes, size preferences of user groups, geographical differences in shrimp size at migration, weather events, and socioeconomic conditions. The opening and closing of these SSNAs can be highly influenced by environmental conditions, proximity to major inlets and rivers, and input from stakeholders.

There are approximately 37,400 acres of SSNAs in North Carolina; however, several of these areas have not opened to shrimp trawling since the 1990s (Table 1). In the Pamlico and Pungo rivers, these SSNAs include: Pungo, Scranton, Slade, South, and Bond/Muddy creeks (Figure 1). Under Amendment 1 to the Shrimp FMP, the use of shrimp trawls (not crab trawls) is prohibited in the Pungo River upstream of a line from Wades Point to Abel Bay and in the Pamlico River upstream of a line from Wades Point to the western shore entrance of Goose Creek (15A NCAC 03R .0114). However, with the adoption of Amendment 3 of the Blue Crab FMP in February 2020 the use of crab trawls was prohibited in areas where shrimp trawls are already prohibited in the Pamlico, Pungo, and Neuse Rivers. Thus, reclassifying these areas as permanent SNAs would not further impact crab trawling.

Following the adoption of the 2006 Shrimp FMP, the Newport River SSNA was closed as a result of the Trawl Nets Prohibited Area (TNPA) designation (Hardesty Farm line) becoming a permanent line by rule (MFC Rule 15A NCAC 03R .0106(7); Figure 2). The Fisheries Director no longer has the authority to open these SSNAs since they are upstream of the permanent shrimp trawls prohibited and TNPA lines established by the Shrimp FMP. The SSNAs in the lower Cape Fear River, Lockwood Folly River, and Saucepan Creek have not opened since being designated as SSNAs in 1986 (Figures 3 and 4).

Table 1. Special secondary nursery areas (SSNA) that have not been opened.

Current Rule ID 03R .0105	Description	Year Designated (reclassified)	Latest Year Opened	Proclamation Reference
2 (a)	Pungo Creek*	1989	1990	SH-22-90
2 (b)	Scranton Creek*	1989	1990	SH-22-90
2 (c)	Slade Creek*	1989	1990	SH-22-90
2 (d)	South Creek*	1989	1990	SH-22-90
2 (e)	Bond Creek/Muddy Creek*	1989	1990	SH-22-90
6	Newport River*	1991	2004	SH-22-2004
10	Cape Fear River**	1986	-	None
11	Lockwood Folly River**	1986	-	None
12	Saucepan Creek**	1986	-	None

* Fisheries Director no longer has authority to open to shrimp trawls due to line changes from rule 15A NCAC 03R .0106(7) and 15A NCAC 03R .0114 (1) & (2)

** Not opened after SSNA designation

IV. AUTHORITY

§ 113-134. Rules

§ 113-173. Recreational Commercial Gear License

§ 113-182. Regulation of fishing and fisheries

§ 113-182.1 Fishery Management Plans
§ 113-221.1 Proclamations; emergency review
§ 143B-289.52 Marine Fisheries Commission - powers and duties

15 NCAC 03J .0103 Gill nets, seines, identification, restrictions
15 NCAC 03N .0105 Prohibited gear, secondary nursery areas

V. DISCUSSION

Area restrictions for trawling have been used to deal with allocation, resource, bycatch, habitat, and safety issues in North Carolina. Since 1978, almost one million acres of estuarine waters have been closed to trawling through nursery area designations (PNA and SNA), military danger zones and restricted areas, and trawl net prohibited areas. In the North River and Ward Creek SSNAs, permanent closures occurred through public negotiations to resolve the constant movement of lines where shrimp trawling was allowed. These closures eliminated confusion over lines continually moving and provided additional habitat protection from bottom disturbing gear. The movement of shrimp trawl lines in the Pamlico, Pungo, and Newport rivers has also prohibited the use of shrimp trawls upstream of the permanent lines, thus protecting habitat used by juvenile spot (*Leiostomus xanthurus*), Atlantic croaker (*Micropogonias undulatus*), shrimp, blue crab (*Callinectes sapidus*), and southern flounder (*Paralichthys lethostigma*). The closure of the Newport River SSNA also provided additional protection to shellfish leases, cultch planting sites, and natural oyster rock located in the SSNA. The most recent closure of the IWW channel from Sunset Beach to the South Carolina state line as well as the SSNAs in Eastern Channel, lower Calabash River, and Shallotte River provide further protection to habitats used by juvenile finfish and crustaceans. These closures will eliminate future bycatch and bottom habitat disturbance since they will be permanently closed to shrimp trawling. However, because most of these areas have been closed for well over two decades, the overall reduction in potential bycatch cannot be quantified.

Changing the designation of the SSNAs listed in Table 1, will have no impact to commercial shrimping since there has been no shrimp trawling in most of these areas since 1990. However, by re-designating these areas to permanent SNAs, crab trawling will no longer be allowed in these areas. However, crab trawling areas in the Pamlico, Pungo, and Neuse Rivers will be eliminated with the adoption of Amendment 3 of the Blue Crab FMP in 2020. Statewide, effort in the crab trawl fishery has been low in recent years with the number of trips ranging from 180 to 470 per year from 2014 to 2016 (NCDMF 2020). The majority of the effort occurs in portions of the Pamlico Sound and the Pamlico, Pungo, and Neuse rivers. Currently, there is no crab trawling in Cape Fear River, Lockwood Folly River, and Saucepan Creek. While the habitat impacts from crab trawling are thought to be limited due to the low amount of effort, studies have shown that crab trawls elevate turbidity and cause structural damage or loss to benthic habitats such as submerged aquatic vegetation and oyster reefs (NCDEQ 2016). Not allowing crab trawling in these areas would provide further protection to critical habitats used by numerous economically important species of fish and invertebrates as well as other prey species. Furthermore, eliminating bottom disturbing gear such as crab and shrimp trawling in these areas would provide additional protection to significant portions of MFC approved Strategic Habitat Areas (SHA). Amendment 3 to the NC Blue Crab FMP (NCDMF 2020) notes that prohibition of blue crab harvest by use of crab and shrimp trawls would have minimal economic effects on the fishery, while addressing fishery and habitat concerns of these gears.

Attendance requirements for gill nets could also change if the designation of these SSNAs were reclassified to permanent SNAs (see Table 2). MFC Rules 15A NCAC 03J .0103 and 03R .0112 require the attendance of small mesh gill nets in all permanent SNAs, but not in SSNAs. Rule 15A NCAC 03J .0103 was established in October 1999 and at the time contained a list of areas where seasonal small mesh gill net attendance was required. The list of areas was moved to 03R .0112 in 2004. The 2001 Red Drum FMP contained measures for reducing red drum (*Sciaenops ocellatus*) bycatch from small mesh gill nets through attendance requirements (NCDMF 2001). The plan implemented small mesh gill net attendance from May 1 through October 31 (later extended through November) in areas where juvenile red drum typically occur, in shallow bays and creeks, shorelines, and over shallow grass beds. Additionally, the South Atlantic Fishery Management Council (SAFMC) designated specific inshore areas in the south Atlantic region as Essential Fish Habitat (EFH) and Habitat Areas of Particular Concern (HAPC) in their Habitat Plan for red drum (SAFMC 1998). In North Carolina, these federal areas included all state-designated nursery habitats of particular importance for red drum (i.e., all PNAs and all SNAs). When the gill net attendance rule language was adopted it covered areas listed as PNAs and SNAs, but not SSNAs. The stated rationale for red drum bycatch reduction would apply to any SNA (past or future). The SSNAs in the lower Cape Fear River, Lockwood Folly River, and Saucepan Creek, with a change to permanent SNAs, would require additional attendance in all waters (not just 50 yards from the shoreline) from May through November, unless exempted from the gill net attendance rule 15A NCAC 03R .0112 (Table 2).

Following the adoption of the 2006 Shrimp FMP (NCDMF 2006), an issue was identified in a portion of the Newport River upstream of the “Hardesty Farm line” after it was classified as a trawl net prohibited area (TNPA) under MFC Rule 15A NCAC 03R .0106(7). While the new designation served the desired purpose of prohibiting trawling upstream of that line, it created an inconsistency with MFC Rule 15A NCAC 03N .0105(b) concerning existing SSNA designation which allowed for seasonal openings of shrimp trawling within the area inside the TNPA. With the adoption of Amendment 1 to the Striped Mullet FMP (NCDMF 2015b), inconsistencies with gill net attendance rules within the Newport River TNPA were resolved by removing the Newport River TNPA reference from MFC Rule 15A NCAC 03R .0112(b)(1), but leaving it subject to 03R .0112(b)(5). By doing this, the striped mullet (*Mugil cephalus*) fishery as well as the other small mesh gill net fisheries could continue to operate, while still prohibiting trawling as intended in the 2006 Shrimp FMP. If the Newport River SSNA is changed to a permanent SNA, the inconsistency with proclamation authority to open the area to trawling which is in a TNPA is corrected, but the change would require May through November small mesh gill net attendance.

The current gill net attendance requirements for each SSNA are visualized in Figures 5-10. If the SSNAs are reclassified to permanent SNAs, consideration could be given to whether they should or should not be subject to MFC Rule 03R .0112(b)(1). Additional rule changes may be required based on this need. Areas could only be subject to MFC Rule 03R .0112(b)(5), which requires gill net attendance (<5 inch stretched mesh) within 50 yards of shore from May 1 through September 30 for the southern areas if exemption wording for these SNAs is added to MFC Rule 03R .0112(b)(1). For the SNAs in the Pamlico and Pungo rivers, if exemption wording is not added to MFC Rule 03R .0112(b)(1) then these SNAs would be required to have gill net attendance (<5 inch stretched mesh) in all waters from May 1 through November 30 and within 200 yards of shore from December 1 through April 30 [except for Scranton Creek which already has year-round gill net attendance (<5 inch stretched mesh) in all waters]. However, if these areas are made permanent SNAs, other fisheries and FMPs could be impacted. MFC Rule 15A 03N .0105 prohibits the use of trawl nets for any purpose in permanent SNAs, thus the Blue Crab FMP would be impacted and crab trawling would be prohibited in these areas. Another option is to reclassify the SSNAs

in Table 1 as TNPAs. By doing this, issues associated with gill net attendance would be avoided, while prohibiting shrimp trawling as recommended by Amendment 1 to the Shrimp FMP. However, if these areas are made TNPAs they would lose their designation as “nursery areas”. Maintaining the designation of SNA, rather than TNPA, makes the basis for no trawling clear to stakeholders. Additionally, the nursery designation allows future opportunities for protections from habitat related impacts associated with development activities through actions by other agencies. Another option would be for these areas to keep their current designation as SSNAs and remain closed to shrimp trawling unless changed in subsequent Shrimp FMP amendments.

Table 2. Current and potential gill net attendance requirement changes (<5 inch stretched mesh) for each special secondary nursery area under consideration for reclassification by management option.

Management Options	Special Secondary Nursery Area								
	Pungo Creek	Scranton Creek	Slade Creek	South Creek	Bond and Muddy creeks	Newport River	Cape Fear River	Lockwood Folly River	Saucepan Creek
Current gill net attendance requirements	Year-round attendance within 200 yards of shore	Year-round attendance in all waters	Year-round attendance within 200 yards of shore	Year-round attendance within 200 yards of shore	Year-round attendance within 200 yards of shore	Attendance within 50 yards of shore from May 1 - September 30	Attendance within 50 yards of shore from May 1 - September 30	Attendance within 50 yards of shore from May 1 - September 30	Attendance within 50 yards of shore from May 1 - September 30
Option 1: Remain as SSNAs*	No change	No change	No change	No change	No change	No change	No change	No change	No change
Option 2: Reclassify as SNAs with gill net attendance	Year-round attendance within 200 yards of shore and attendance in all waters from May 1 - November 30	No Change	Year-round attendance within 200 yards of shore and attendance in all waters from May 1 - November 30	Year-round attendance within 200 yards of shore and attendance in all waters from May 1 - November 30	Year-round attendance within 200 yards of shore and attendance in all waters from May 1 - November 30	Extends gill net attendance period in all waters from May 1 - November 30	Extends gill net attendance period in all waters from May 1 - November 30	Extends gill net attendance period in all waters from May 1 - November 30	Extends gill net attendance period in all waters from May 1 - November 30
Option 3: Reclassify as SNAs [±] with gill net attendance exemption	No change	No change	No change	No change	No change	No change	No change	No change	No change
Option 4: Reclassify as TNPA [†]	No change	No change	No change	No change	No change	No change	No change	No change	No change

* *Special Secondary Nursery Area*

[±] *Secondary Nursery Area*

[†] *Trawl Net Prohibited Area*

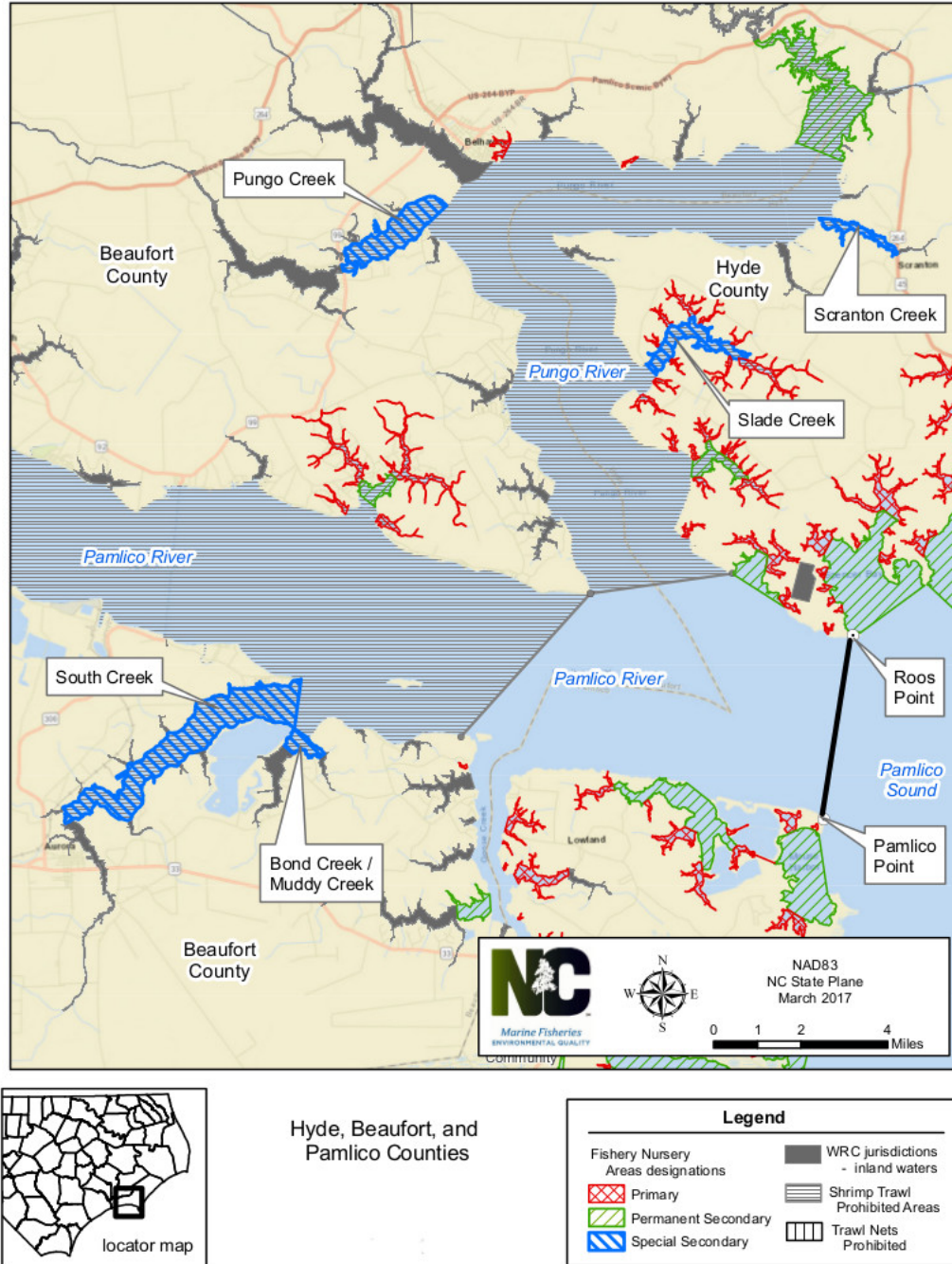


Figure 1. Map of the shrimp management and nursery areas in the Pamlico and Pungo rivers. Areas to the west of the line beginning at Roos Point to Pamlico Point are subject to gill net attendance rules (<5 inch stretched mesh). Gill net attendance will be required in all areas marked as special secondary nursery areas (SSNAs) from May 1 through November 30 if their designation is changed to permanent secondary nursery areas (SNAs). Year-round attendance (<5 inch stretched mesh) is already required in Scranton Creek.

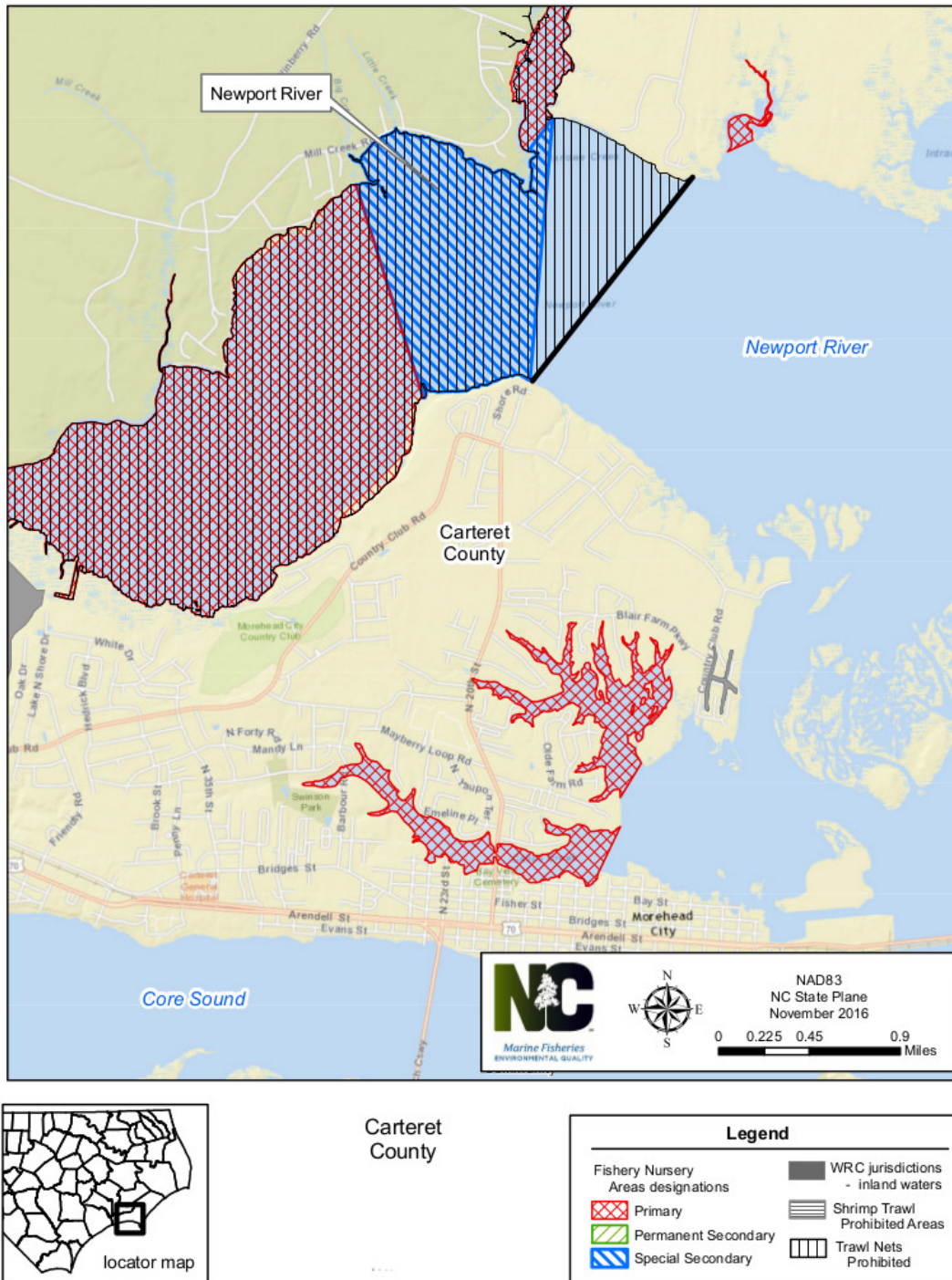
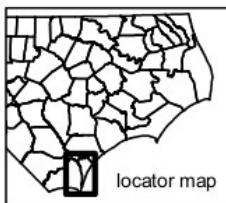
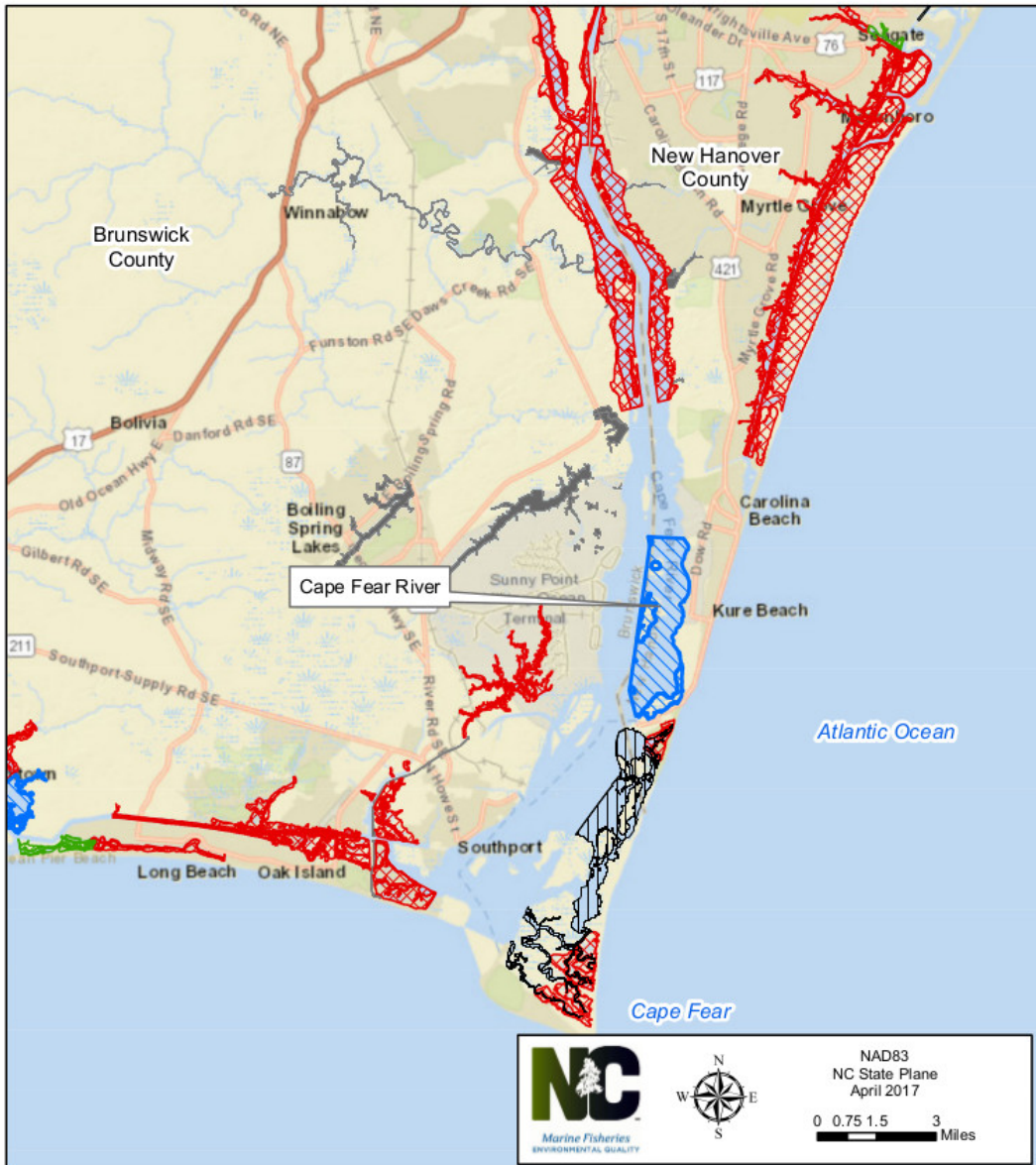


Figure 2. Map of the shrimp management and nursery areas in the Newport River. Gill net attendance (<5 inch stretched mesh) will be required in all areas marked as special secondary nursery areas (SSNAs) from May 1 through November 30 if their designation is changed to permanent secondary nursery areas (SNAs).



Brunswick County
and
New Hanover County

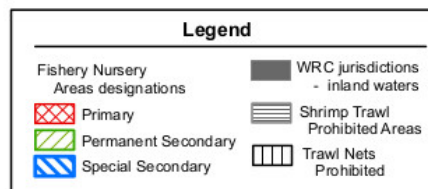
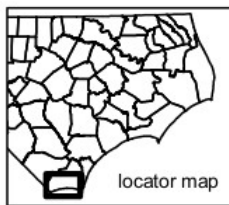
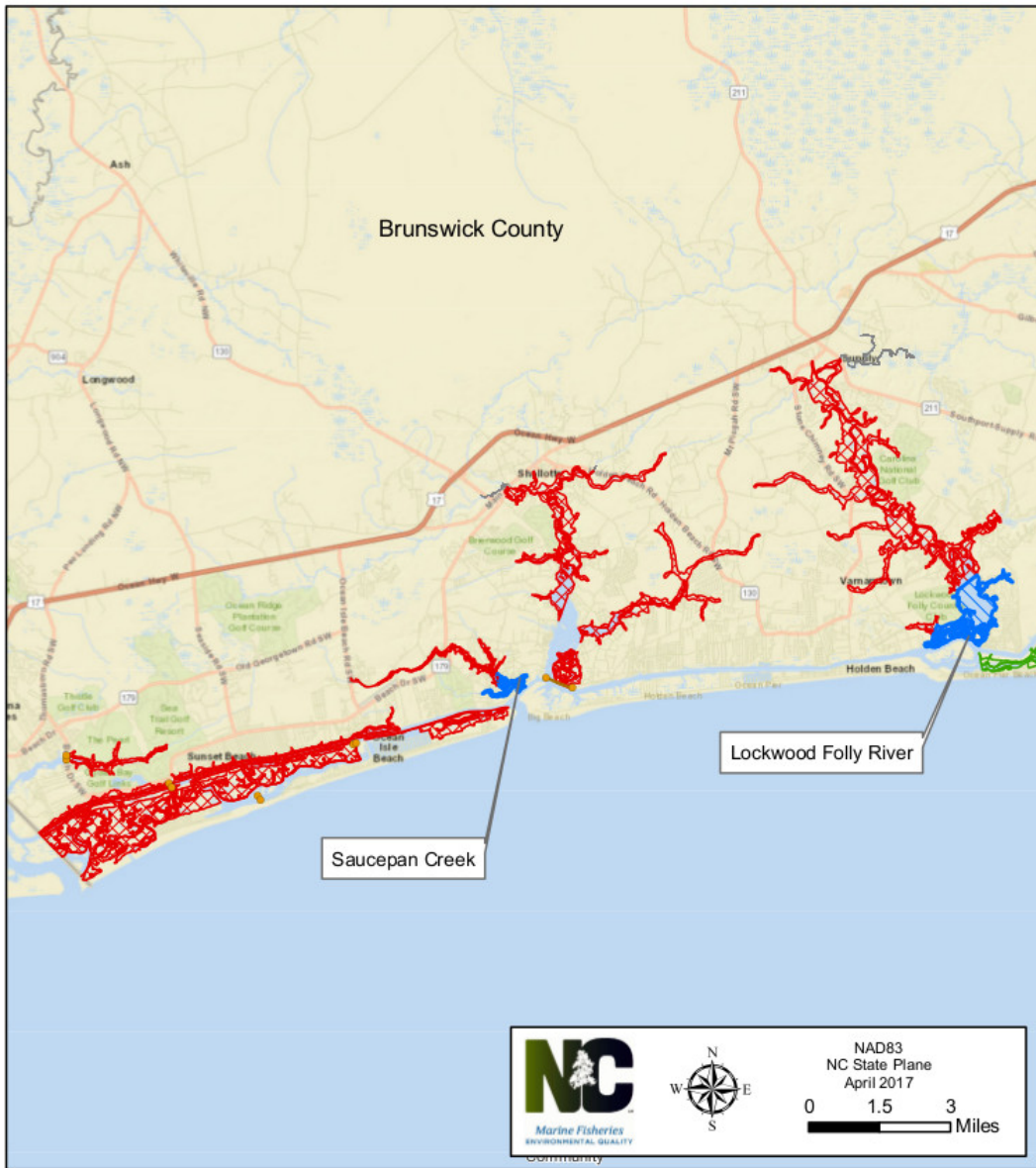


Figure 3. Map of the shrimp management and nursery areas in the Cape Fear River. Gill net attendance (<5 inch stretched mesh) will be required in all areas marked as special secondary nursery areas (SSNAs) from May 1 through November 30 if their designation is changed to permanent secondary nursery areas (SNAs).



Brunswick County

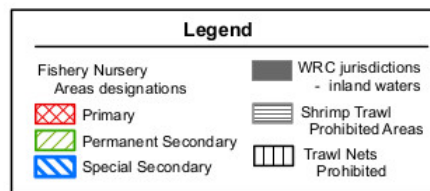


Figure 4. Map of the shrimp management and nursery areas in Brunswick County. Gill net attendance (<5 inch stretched mesh) will be required in all areas marked as special secondary nursery areas (SSNAs) from May 1 through November 30 if their designation is changed to permanent secondary nursery areas (SNAs).

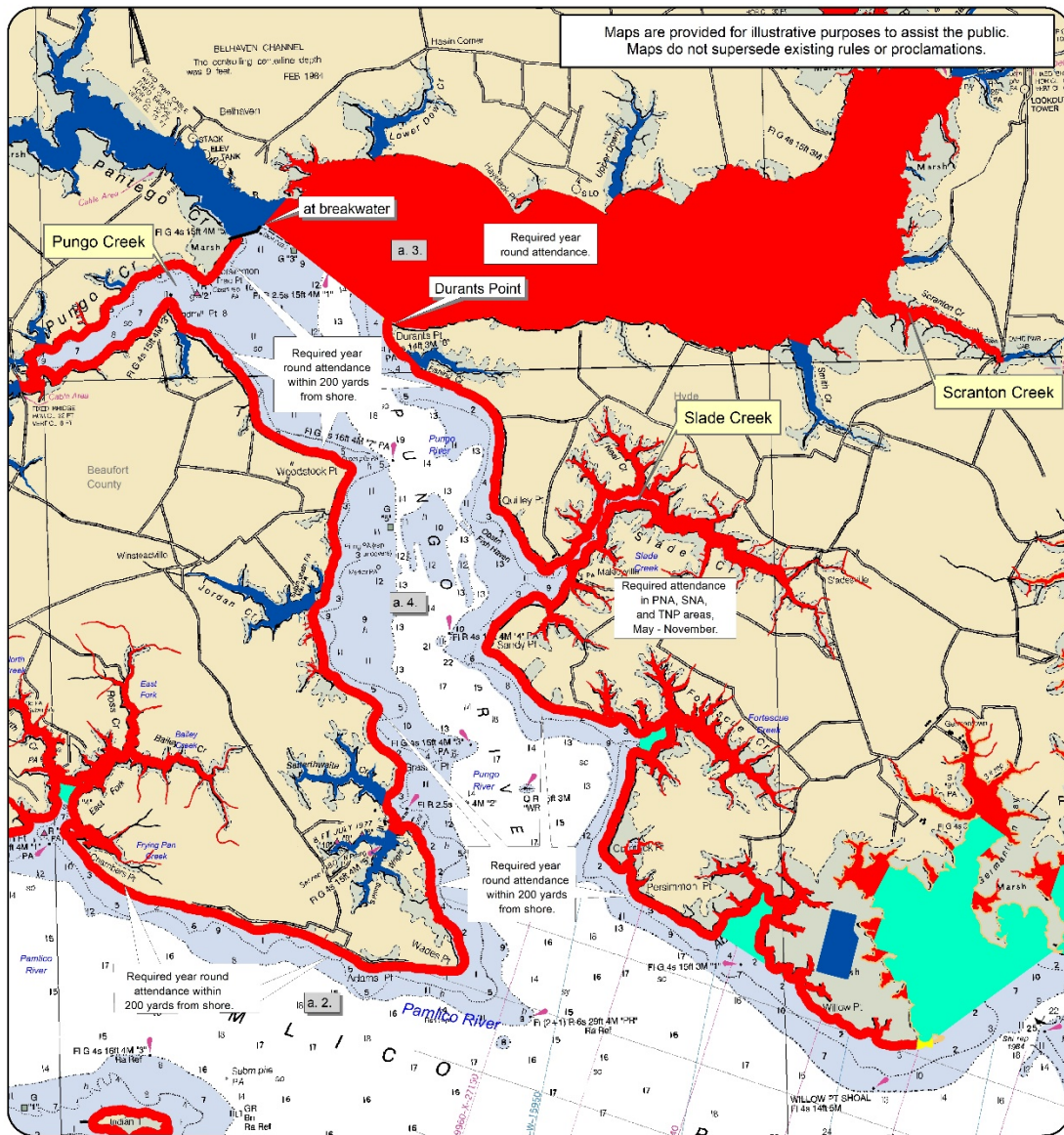


Figure 5. Map of current gill net attendance (<5 inch stretched mesh) and primary and permanent secondary nursery areas in Pungo, Scranton, and Slade creeks.

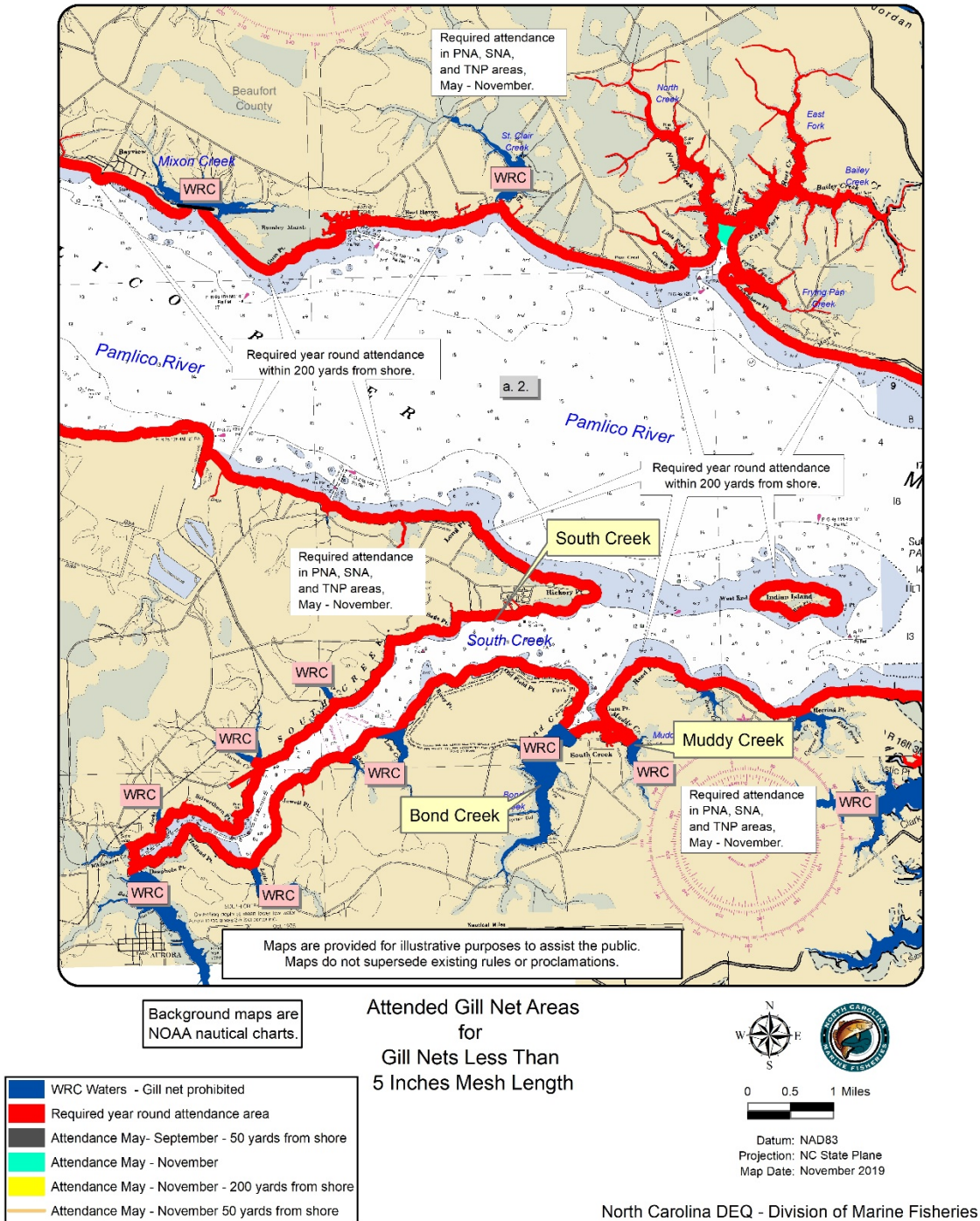


Figure 6. Map of current gill net attendance (<5 inch stretched mesh) and primary and permanent secondary nursery areas in South, Bond, and Muddy Creeks.

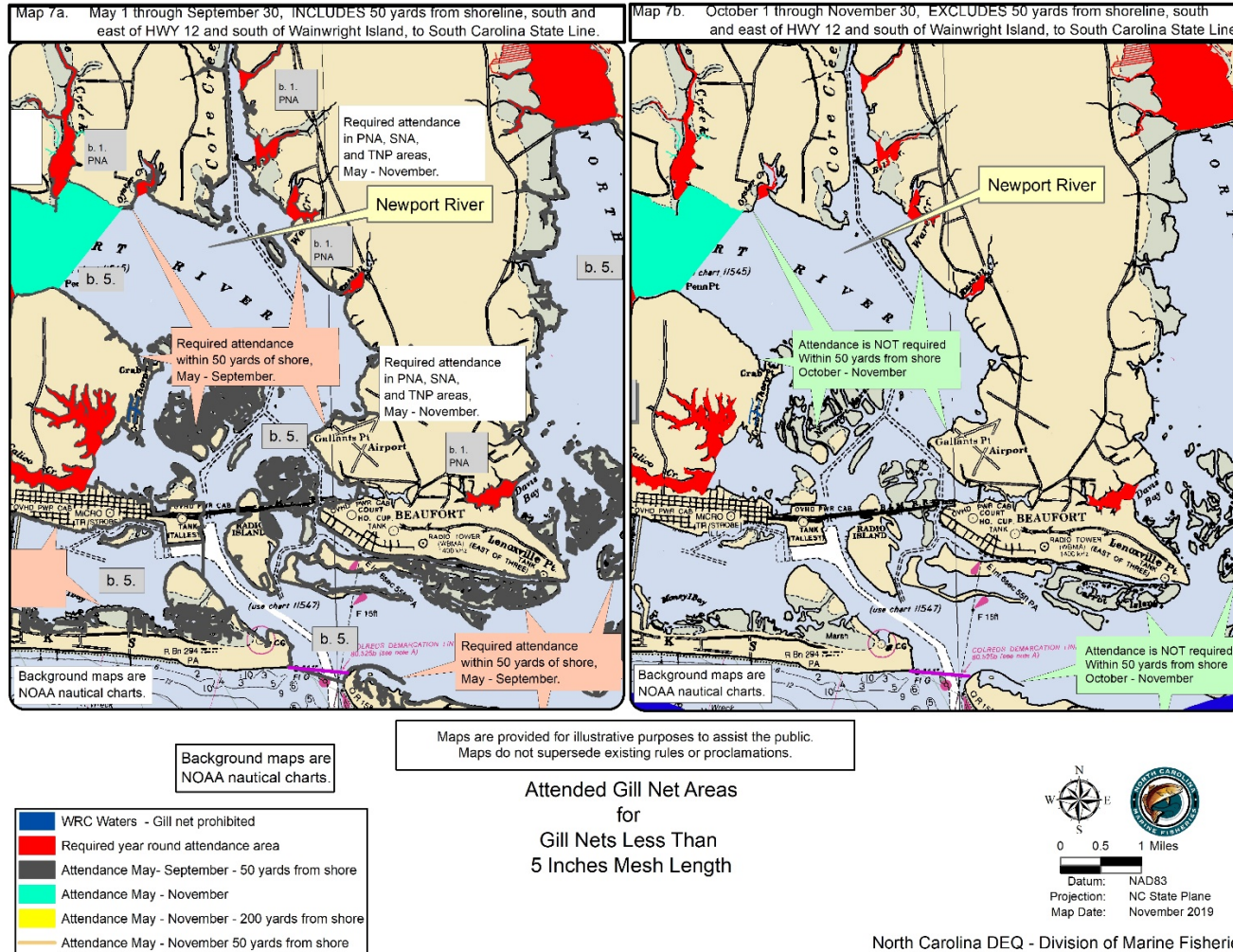


Figure 7. Map of current gill net attendance (<5 inch stretched mesh) and nursery areas in the Newport River.

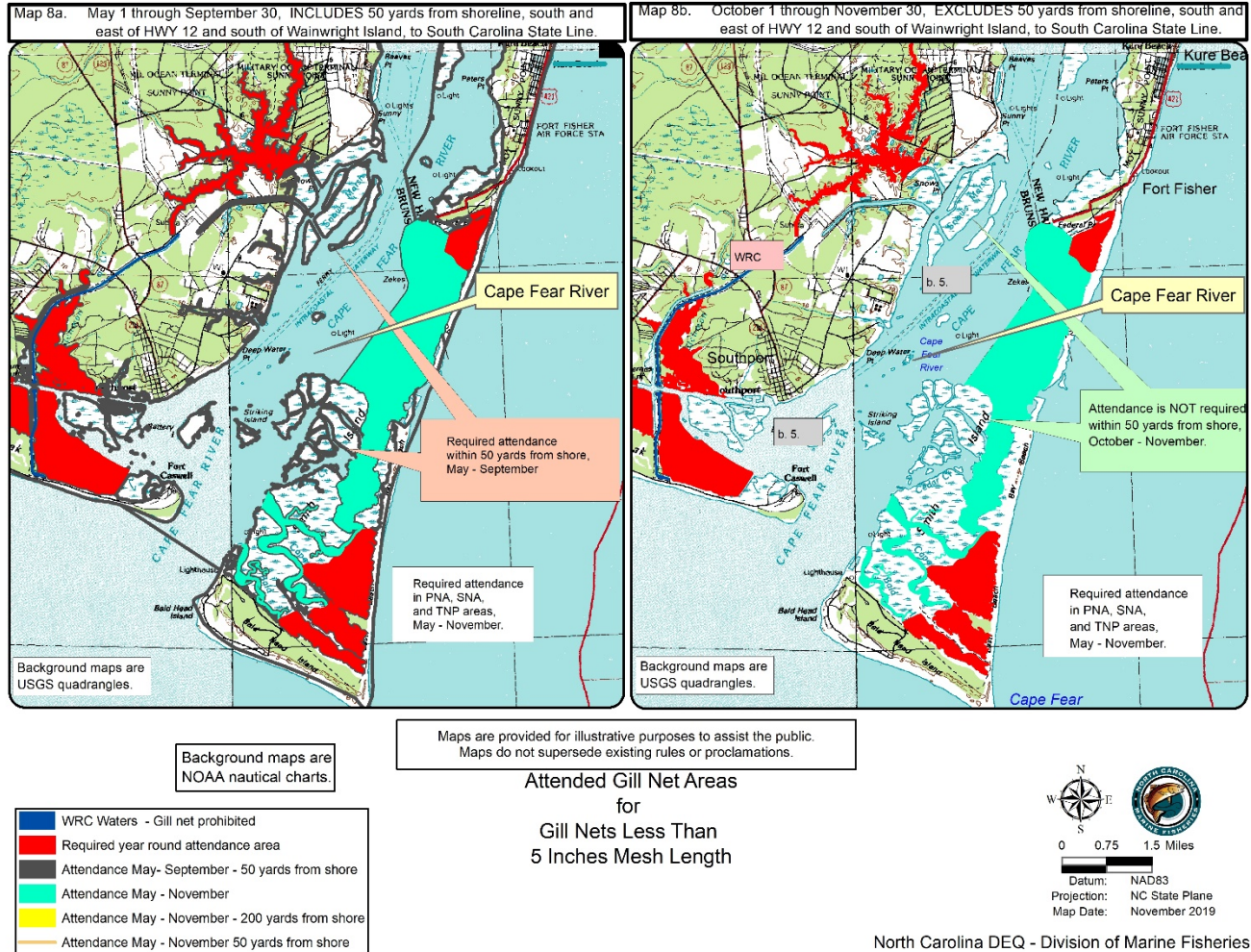


Figure 8. Map of current gill net attendance (<5 inch stretched mesh) and nursery areas in the Cape Fear River.

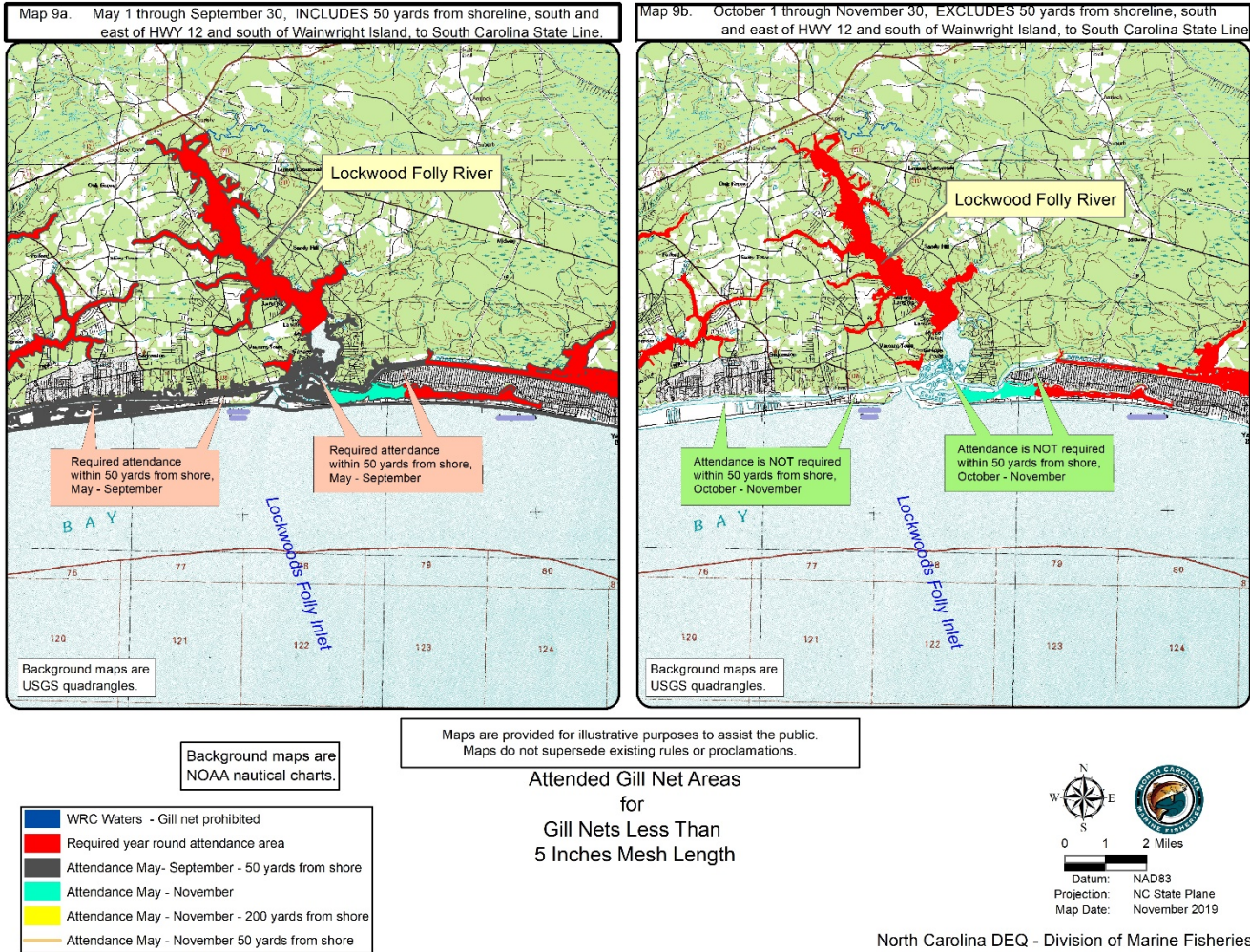


Figure 9. Map of current gill net attendance (<5 inch stretched mesh) and nursery areas in the Lockwood Folly River.

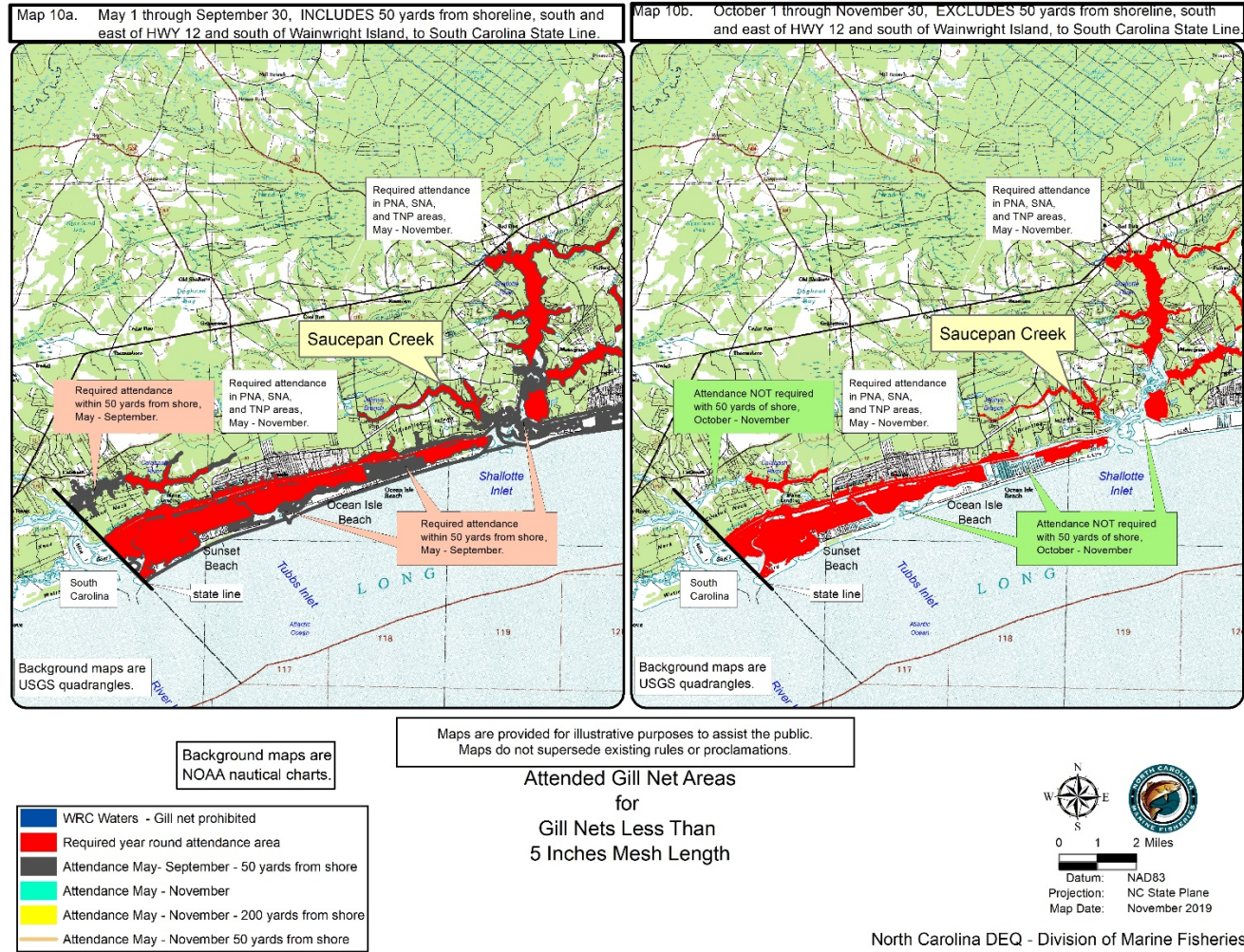


Figure 10. Map of current gill net attendance (<5 inch stretched mesh) and nursery areas in Saucepan Creek.

VI. PROPOSED RULE(S)

Options 2 and 3:

15A NCAC 03R .0104 PERMANENT SECONDARY NURSERY AREAS

The permanent secondary nursery areas referenced in 15A NCAC 03N .0105(a) are delineated in the following coastal water areas:

- (1) Roanoke Sound:
Inner Shallowbag Bay - west of a line beginning on the northeast shore at a point 35° 54.6729' N – 75° 39.8099' W; running southerly to the southeast shore to a point 35° 54.1722' N – 75° 39.6806' W;
- (2) ~~In~~in the Pamlico Long Sound Area:
 - (a) Long Shoal River - north of a line beginning at the 5th Avenue Canal at a point 35° 35.2120' N – 75° 53.2232' W; running easterly to the east shore on Pains Point to a point 35° 35.0666' N – 75° 51.2000' W;
 - (b) Pains Bay - east of a line beginning on Pains Point at a point 35° 35.0666' N – 75° 51.2000' W; running southerly to Rawls Island to a point 35° 34.4666' N – 75° 50.9666' W; running easterly to the east shore to a point 35° 34.2309' N – 75° 50.2695' W;
 - (c) Wysocking Bay - northwest of a line beginning at Benson Point at a point 35° 22.9684' N – 76° 03.7129' W; running northeasterly to Long Point to a point 35° 24.6895' N – 76° 01.3155' W;
 - (d) Juniper Bay-Cunning Harbor - north of a line beginning on the west shore of Juniper Bay at a point 35° 20.6217' N – 76° 15.5447' W; running easterly to a point 35° 20.4372' N – 76° 13.2697' W; running easterly to the east shore of Cunning Harbor to a point 35° 20.3413' N – 76° 12.3378' W;
 - (e) Swanquarter Bay - north of a line beginning at The Narrows at a point 35° 20.9500' N – 76° 20.6409' W; running easterly to the east shore to a point 35° 21.5959' N – 76° 18.3580' W;
 - (f) Deep Cove - The Narrows - north and east of a line beginning on the west shore at a point 35° 20.9790' N – 76° 23.8577' W; running southeasterly to Swanquarter Island to a point 35° 20.5321' N – 76° 22.7869' W; and west of a line at The Narrows beginning on the north shore to a point 35° 20.9500' N – 76° 20.6409' W; running southerly to Swanquarter Island to a point 35° 20.7025' N – 76° 20.5620' W;
 - (g) Rose Bay - north of a line beginning on Long Point at a point 35° 23.3404' N – 76° 26.2491' W; running southeasterly to Drum Point to a point 35° 22.4891' N – 76° 25.2012' W;
 - (h) Spencer Bay - northwest of a line beginning on Roos Point at a point 35° 22.3866' N – 76° 27.9225' W; running northeasterly to Long Point to a point 35° 23.3404' N – 76° 26.2491' W;
 - (i) Abel Bay - northeast of a line beginning on the west shore at a point 35° 23.6463' N – 76° 31.0003' W; running southeasterly to the east shore to a point 35° 22.9353' N – 76° 29.7215' W;
 - (j) Mouse Harbor - west of a line beginning on Persimmon Tree Point at a point 35° 18.3915' N – 76° 29.0454' W; running southerly to Yaupon Hammock Point to a point 35° 17.1825' N – 76° 28.8713' W;

- (k) Big Porpoise Bay - northwest of a line beginning on Big Porpoise Point at a point 35° 15.6993' N – 76° 28.2041' W; running southwesterly to Middle Bay Point to a point 35° 14.9276' N – 76° 28.8658' W;
 - (l) Middle Bay - west of a line beginning on Deep Point at a point 35° 14.8003' N – 76° 29.1923' W; running southerly to Little Fishing Point to a point 35° 13.5419' N – 76° 29.6123' W;
 - (m) Jones Bay - west of a line beginning on Mink Trap Point at a point 35° 13.4968' N – 76° 31.1040' W; running southerly to Boar Point to a point 35° 12.3253' N – 76° 31.2767' W; and
 - (n) ~~In~~in the Bay River Area:
 - (i) Bonner Bay - southeast of a line beginning on the west shore at a point 35° 09.6281' N – 76° 36.2185' W; running northeasterly to Davis Island Point to a point 35° 10.0888' N – 76° 35.2587' W; and
 - (ii) Gales Creek-Bear Creek - north and west of a line beginning on Sanders Point at a point 35° 11.2833' N – 76° 35.9000' W; running northeasterly to the east shore to a point 35° 11.9000' N – 76° 34.2833' W;
- (3) ~~In~~in the Pamlico and Pungo Rivers Area:
- (a) Pungo River - north of a line beginning on the west shore at a point 35° 32.2000' N – 76° 29.2500' W; running east near Beacon "21" to the east shore to a point 35° 32.0833' N – 76° 28.1500' W;
 - (b) Pungo Creek - west of a line beginning on Persimmon Tree Point at a point 35° 30.7633' N – 76° 38.2831' W; running southwesterly to Windmill Point to a point 35° 31.1546' N – 76° 37.7590' W;
 - (c) Scranton Creek - south and east of a line beginning on the west shore at a point 35° 30.6810' N – 76° 28.3435' W; running easterly to the east shore to a point 35° 30.7075' N – 76° 28.6766' W;
 - (d) Slade Creek - east of a line beginning on the west shore at a point 35° 27.8879' N – 76° 32.9906' W; running southeasterly to the east shore to a point 35° 27.6510' N – 76° 32.7361' W;
 - ~~(b)~~(e) Fortescue Creek - east of a line beginning on Pasture Point at a point 35° 25.9213' N – 76° 31.9135' W; running southerly to the Lupton Point shore to a point 35° 25.6012' N – 76° 31.9641' W;
 - ~~(e)~~(f) Pamlico River - west of a line beginning on Ragged Point at a point 35° 27.5768' N – 76° 54.3612' W; running southwesterly to Mauls Point to a point 35° 26.9176' N – 76° 55.5253' W;
 - ~~(d)~~(g) North Creek - north of a line beginning on the west shore at a point 35° 25.3988' N – 76° 40.0455' W; running southeasterly to the east shore to a point 35° 25.1384' N – 76° 39.6712' W;
 - (h) South Creek - west of a line beginning on Hickory Point at a point 35° 21.7385' N – 76° 41.5907' W; running southerly to Fork Point to a point 35° 20.7534' N – 76° 41.7870' W;
 - (i) Bond Creek/Muddy Creek - south of a line beginning on Fork Point at a point 35° 20.7534' N – 76° 41.7870' W; running southeasterly to Gum Point to a point 35° 20.5632' N – 76° 41.4645' W;

- ~~(e)~~(j) ~~In~~ in the Goose Creek Area, Campbell Creek - west of a line beginning on the north shore at a point 35° 17.3600' N – 76° 37.1096' W; running southerly to the south shore to a point 35° 16.9876' N – 76° 37.0965' W; and
- ~~(f)~~(k) Oyster Creek-Middle Prong - southwest of a line beginning on Pine Hammock at a point 35° 19.5586' N – 76° 32.8830' W; running easterly to Cedar Island to a point 35° 19.5490' N – 76° 32.7365' W; and southwest of a line beginning on Cedar Island at a point 35° 19.4921' N – 76° 32.2590' W; running southeasterly to Beard Island Point to a point 35° 19.1265' N – 76° 31.7226' W;
- (4) ~~In~~ in the Neuse River Area:
 - (a) Lower Broad Creek - west of a line beginning on the north shore at a point 35° 05.8314' N – 76° 35.3845' W; running southwesterly to the south shore to a point 35° 05.5505' N – 76° 35.7249' W;
 - (b) Greens Creek - north of a line beginning on the west shore of Greens Creek at a point 35° 01.3476' N – 76° 42.1740' W; running northeasterly to the east shore to a point 35° 01.4899' N – 76° 41.9961' W;
 - (c) Dawson Creek - north of a line beginning on the west shore at a point 34° 59.5920' N – 76° 45.4620' W; running southeasterly to the east shore to a point 34° 59.5800' N – 76° 45.4140' W;
 - (d) Goose Creek - north and east of a line beginning at a point on the west shore at a point 35° 02.6642' N – 76° 56.4710' W; running southeasterly to a point on Cooper Point 35° 02.0908' N – 76° 56.0092' W;
 - (e) Upper Broad Creek - northeast of a line beginning at a point on Rowland Point on the north shore at a point 35° 02.6166' N – 76° 56.4500' W; running southeasterly to the south shore to a point 35° 02.8960' N – 76° 56.7865' W;
 - (f) Clubfoot Creek - south of a line beginning on the west shore at a point 34° 54.5424' N – 76° 45.7252' W; running easterly to the east shore to a point 34° 54.4853' N – 76° 45.4022' W; and
 - (g) ~~In~~ in the Adams Creek Area, Cedar Creek - east of a line beginning on the north shore at a point 34° 56.1203' N – 76° 38.7988' W; running southerly to the south shore to a point 34° 55.8745' N – 76° 38.8153' W;
- (5) Newport River - west of a line beginning near Penn Point on the south shore at a point 34° 45.6960' N – 76° 43.5180' W; running northeasterly to the north shore to a point 34° 46.8490' N – 76° 43.3296' W;
- ~~(5)~~(6) Virginia Creek - all waters of the natural channel northwest of the primary nursery area line;
- ~~(6)~~(7) Old Topsail Creek - all waters of the dredged channel northwest of the primary nursery area line;
- ~~(7)~~(8) Mill Creek - all waters west of a line beginning on the north shore at a point 34° 20.6420' N – 77° 42.1220' W; running southwesterly to the south shore to a point 34° 20.3360' N – 77° 42.2400' W;
- ~~(8)~~(9) Pages Creek - all waters west of a line beginning on the north shore at a point 34° 16.1610' N – 77° 45.9930' W; running southwesterly to the south shore to a point 34° 15.9430' N – 77° 46.1670' W;
- ~~(9)~~(10) Bradley Creek - all waters west of a line beginning on the north shore at a point 34° 12.7030' N – 77° 49.1230' W; running southerly near the dredged channel to a point 34° 12.4130' N – 77° 49.2110' W; ~~and~~

- (11) Cape Fear River - all waters bounded by a line beginning on the south side of the Spoil Island at the intersection of the Intracoastal Waterway and the Cape Fear River ship channel at a point 34° 01.5780' N – 77° 56.0010' W; running easterly to the east shore of the Cape Fear River to a point 34° 01.7230' N – 77° 55.1010' W; running southerly and bounded by the shoreline to the Ferry Slip at Federal Point at a point 33° 57.8080' N – 77° 56.4120' W; running northerly to Bird Island to a point 33° 58.3870' N – 77° 56.5780' W; running northerly along the west shoreline of Bird Island and the Cape Fear River spoil islands back to point of origin;
- (12) Lockwood Folly River - all waters north of a line beginning on Howells Point at a point 33° 55.3680' N – 78° 12.7930' W and running in a westerly direction along the Intracoastal Waterway near Intracoastal Waterway Marker "46" to a point 33° 55.3650' N – 78° 13.8500' W;
- (13) Saucepan Creek - all waters north of a line beginning on the west shore at a point 33° 54.6290' N – 78° 22.9170' W; running northeasterly to the east shore to a point 33° 54.6550' N – 78° 22.8670' W; and
- (14) Davis Creek - all waters east of a line beginning on Horse Island at a point 33° 55.0160' N – 78° 12.7380' W; running southerly to Oak Island to a point 33° 54.9190' N – 78° 12.7170' W; continuing upstream to the primary nursery line and Davis Canal, all waters southeast of a line beginning on Pinner Point at a point 33° 55.2930' N – 78° 11.6390' W; running southwesterly across the mouth of Davis Canal to the spoil island at the southwest intersection of the ~~IWW~~-Intracoastal Waterway and Davis Canal to a point 33° 55.2690' N – 78° 11.6550' W.

*History Note: Authority G.S. 113-134; 113-182; 143B-289.52;
 Eff. January 1, 1991;
 Amended Eff. March 1, 1996; March 1, 1994;
 Recodified from 15A NCAC 3R .0004 Eff. December 17, 1996;
 Amended Eff. May 1, 2021; April 1, 2011; August 1, 2004; May 1, 1997.*

Options 2-4:

15A NCAC 03R .0105 SPECIAL SECONDARY NURSERY AREAS

The special secondary nursery areas referenced in 15A NCAC 03N .0105(b) are designated in the following coastal water areas:

- (1) Roanoke Sound:
- (a) Outer Shallowbag Bay - west of a line beginning on Baum Point at a point 35° 55.1461' N – 75° 39.5618' W; running southeasterly to Ballast Point to a point 35° 54.6250' N – 75° 38.8656' W; including the canal on the southeast shore of Shallowbag Bay; and
- (b) Kitty Hawk Bay/Buzzard Bay - within the area designated by a line beginning at a point on the east shore of ~~Collington~~-Colington Creek at a point 36° 02.4360' N – 75° 42.3189' W; running westerly to a point 36° 02.6630' N – 75° 41.4102' W; running along the shoreline to a point 36° 02.3264' N – 75° 42.3889' W; running southwesterly to a point 36° 02.1483' N – 75° 42.4329' W; running along the shoreline to a point 36° 01.6736' N – 75° 42.5313' W; running southwesterly to a point 36° 01.5704' N – 75° 42.5899' W; running along the shoreline to a point 36°

00.9162' N – 75° 42.2035' W; running southeasterly to a point 36° 00.8253' N – 75° 42.0886' W; running along the shoreline to a point 35° 59.9886' N – 75° 41.7284' W; running southwesterly to a point 35° 59.9597' N – 75° 41.7682' W; running along the shoreline to the mouth of Buzzard Bay to a point 35° 59.6480' N – 75° 32.9906' W; running easterly to Mann Point to a point 35° 59.4171' N – 75° 32.7361' W; running northerly along the shoreline to the point of beginning;

~~(2)~~ (2) In the Pamlico and Pungo rivers Area:

- ~~(a)~~ (a) ~~Pungo Creek – west of a line beginning on Persimmon Tree Point at a point 35° 30.7633' N – 76° 38.2831' W; running southwesterly to Windmill Point to a point 35° 31.1546' N – 76° 37.7590' W;~~
- ~~(b)~~ (b) ~~Scranton Creek – south and east of a line beginning on the west shore at a point 35° 30.6810' N – 76° 28.3435' W; running easterly to the east shore to a point 35° 30.7075' N – 76° 28.6766' W;~~
- ~~(c)~~ (c) ~~Slade Creek – east of a line beginning on the west shore at a point 35° 27.8879' N – 76° 32.9906' W; running southeasterly to the east shore to a point 35° 27.6510' N – 76° 32.7361' W;~~
- ~~(d)~~ (d) ~~South Creek – west of a line beginning on Hickory Point at a point 35° 21.7385' N – 76° 41.5907' W; running southerly to Fork Point to a point 35° 20.7534' N – 76° 41.7870' W; and~~
- ~~(e)~~ (e) ~~Bond Creek/Muddy Creek – south of a line beginning on Fork Point 35° 20.7534' N – 76° 41.7870' W; running southeasterly to Gum Point to a point 35° 20.5632' N – 76° 41.4645' W;~~

~~(3)~~(2) ~~In in~~ the West Bay Area:

- ~~(a)~~ (a) West Thorofare Bay - south of a line beginning on the west shore at a point 34° 57.2199' N – 76° 24.0947' W; running easterly to the east shore to a point 34° 57.4871' N – 76° 23.0737' W;
- ~~(b)~~ (b) Long Bay-Ditch Bay - west of a line beginning on the north shore of Ditch Bay at a point 34° 57.9388' N – 76° 27.0781' W; running southwesterly to the south shore of Ditch Bay to a point 34° 57.2120' N – 76° 27.2185' W; then south of a line running southeasterly to the east shore of Long Bay to a point 34° 56.7633' N – 76° 26.3927' W; and
- ~~(c)~~ (c) Turnagain Bay - south of a line beginning on the west shore at a point 34° 59.4065' N – 76° 30.1906' W; running easterly to the east shore to a point 34° 59.5668' N – 76° 29.3557' W;

~~(4)~~(3) ~~In in~~ the Core Sound Area:

- ~~(a)~~ (a) Cedar Island Bay - northwest of a line beginning near the gun club dock at a point 34° 58.7203' N – 76° 15.9645' W; running northeasterly to the south shore to a point 34° 57.7690' N – 76° 16.8781' W;
- ~~(b)~~ (b) Thorofare Bay-Barry Bay - northwest of a line beginning on Rumley Hammock at a point 34° 55.4853' N – 76° 18.2487' W; running northeasterly to Hall Point to a point 34° 54.4227' N – 76° 19.1908' W;
- ~~(c)~~ (c) Nelson Bay - northwest of a line beginning on the west shore of Nelson Bay at a point 34° 51.1353' N – 76° 24.5866' W; running northeasterly to Drum Point to a point 34° 51.6417' N – 76° 23.7620' W;

- (d) Brett Bay - north of a line beginning on the west shore at a point 34° 49.4019' N – 76° 26.0227' W; running easterly to Piney Point to a point 34° 49.5799' N – 76° 25.0534' W; and
- (e) Jarrett Bay - north of a line beginning on the west shore near Old Chimney at a point 34° 45.5743' N – 76° 30.0076' W; running easterly to a point east of Davis Island 34° 45.8325' N – 76° 28.7955' W;
- ~~(5)~~(4) ~~In~~in the North River Area:
 - (a) North River - north of a line beginning on the west shore at a point 34° 46.0383' N – 76° 37.0633' W; running easterly to a point on the east shore 34° 46.2667' N – 76° 35.4933' W; and
 - (b) Ward Creek - east of a line beginning on the north shore at a point 34° 46.2667' N – 76° 35.4933' W; running southerly to the south shore to a point 34° 45.4517' N – 76° 35.1767' W;
- ~~(6)~~ Newport River – west of a line beginning near Penn Point on the south shore at a point 34° 45.6960' N – 76° 43.5180' W; running northeasterly to the north shore to a point 34° 46.8490' N – 76° 43.3296' W;
- ~~(7)~~(5) New River - all waters upstream of a line beginning on the north side of the N.C. Highway 172 Bridge at a point 34° 34.7680' N – 77° 23.9940' W; running southerly to the south side of the bridge at a point 34° 34.6000' N – 77° 23.9710' W;
- ~~(8)~~(6) Chadwick Bay - all waters west of a line beginning on the northeast side of Chadwick Bay at a point 34° 32.5630' N – 77° 21.6280' W; running southeasterly to a point near Marker "6" at 34° 32.4180' N – 77° 21.6080' W; running westerly to Roses Point at a point 34° 32.2240' N – 77° 22.2880' W; following the shoreline in Fullard Creek to a point 34° 32.0340' N – 77° 22.7160' W; running northwesterly to a point 34° 32.2210' N – 77° 22.8080' W; following the shoreline to the west point of Bump's Creek at a point 34° 32.3430' N – 77° 22.4570' W; running northeasterly to the east shore to a point 34° 32.4400' N – 77° 22.3830' W; following the shoreline of Chadwick Bay back to the point of origin; and
- ~~(9)~~(7) Intracoastal Waterway - all waters in the ~~IWW~~Intracoastal Waterway maintained channel from a point near Marker "17" north of Alligator Bay 34° 30.7930' N – 77° 23.1290' W; to a point near Marker "49" at Morris Landing at a point 34° 28.0820' N – 77° 30.4710' W; and all waters in the ~~IWW~~Intracoastal Waterway maintained channel and 100 feet on either side from Marker "49" to the N.C. Highway 50-210 Bridge at Surf ~~City~~City.
- ~~(10)~~ Cape Fear River – all waters bounded by a line beginning on the south side of the Spoil Island at the intersection of the IWW and the Cape Fear River ship channel at a point 34° 01.5780' N – 77° 56.0010' W; running easterly to the east shore of the Cape Fear River to a point 34° 01.7230' N – 77° 55.1010' W; running southerly and bounded by the shoreline to the Ferry Slip at Federal Point at a point 33° 57.8080' N – 77° 56.4120' W; running northerly to Bird Island to a point 33° 58.3870' N – 77° 56.5780' W; running northerly along the west shoreline of Bird Island and the Cape Fear River spoil islands back to point of origin;
- ~~(11)~~ Lockwood Folly River – all waters north of a line beginning on Howells Point at a point 33° 55.3680' N – 78° 12.7930' W and running in a westerly direction along the IWW near IWW Marker "46" to a point 33° 55.3650' N – 78° 13.8500' W; and

- (12) ~~Saucepan Creek — all waters north of a line beginning on the west shore at a point 33° 54.6290' N 78° 22.9170' W; running northeasterly to the east shore to a point 33° 54.6550' N 78° 22.8670' W.~~

*History Note: Authority G.S. 113-134; 113-182; 143B-289.52;
Eff. January 1, 1991;
Amended Eff. March 1, 1996; March 1, 1994;
Recodified from 15A NCAC 3R .0005 Eff. December 17, 1996;
Amended Eff. May 1, 2021; April 1, 2011; August 1, 2004; May 1, 1997;*

VII. PROPOSED MANAGEMENT OPTIONS

- 1) *Status quo* (keep all areas classified as special secondary nursery areas and continue to keep them closed to shrimp trawling)
 - + No rule changes are needed
 - + Implements actions of Amendment 1 to the Shrimp FMP
 - + Does not impact other FMPs
 - + Does not impact other fisheries
 - + No impacts to commercial shrimp fishermen since the areas have not been opened in recent years
 - Inconsistencies between current management practices and area designations for the Newport, Cape Fear, and Lockwood Folly rivers and Pungo, Scranton, Slade, South and Bond/Muddy creeks SSNAs remain

- 2) Change the designation of special secondary nursery areas that have not been opened to trawling in many years to permanent secondary nursery areas which would make them subject to gill net attendance under 03R .0112(b)(1).
 - + Eliminate bycatch from shrimp trawls in these SSNAs
 - + Protects habitat from bottom disturbing gear
 - + Implements actions of Amendment 1 to the Shrimp FMP
 - + No impact to commercial shrimp fishermen since the areas have not been opened in recent years
 - +/- Gill net attendance required from May 1 through November 30
 - Nursery rule changes are needed
 - Eliminates crab trawling

- 3) Change the designation of special secondary nursery areas that have not been opened to trawling in many years to permanent secondary nursery areas and exempt them from 03R .0112(b)(1).
 - + Eliminate bycatch from shrimp trawls in these SSNAs
 - + Protects habitat from bottom disturbing gear
 - + Implements actions of Amendment 1 to the Shrimp FMP
 - + No impact to commercial shrimp fishermen since the areas have not been opened in recent years
 - Both nursery and gill net attendance rule changes are needed
 - Eliminates crab trawling

- 4) Change the designation of special secondary nursery areas that have not been opened in many years to trawling to permanent trawl net prohibited area (15A NCAC 03R 0106).
 - + Eliminate bycatch from shrimp trawls in SSNAs
 - + Protects habitat from bottom disturbing gear
 - + Eliminates the need for gill net attendance
 - + Implements actions of Amendment 1 to the Shrimp FMP
 - + No impact to commercial fishermen since the areas have not been opened in recent years
 - Nursery and TNPA rule changes are needed
 - Eliminates crab trawling
 - Areas would lose “nursery” designation

VIII. RECOMMENDATION

NCDMF:

Change the designation of special secondary nursery areas that have not been opened to trawling in many years to permanent secondary nursery areas which would make them subject to additional gill net attendance under 03R .0112(b)(1). [Option 2]

Habitat and Water Quality Advisory Committee:

Change the designation of special secondary nursery areas that have not been opened to trawling in many years to permanent secondary nursery areas which would make them subject to additional gill net attendance under 03R .0112(b)(1). [Option 2]

MFC Selected Management Strategy:

Change the designation of special secondary nursery areas that have not been opened to trawling in many years to permanent secondary nursery areas which would make them subject to additional gill net attendance under 03R .0112(b)(1). [Option 2]

IX. MANAGEMENT REVISION TO AMENDMENT 1 TO THE N.C. SHRIMP FMP

Amendment 1 to the North Carolina Shrimp FMP provides the management framework (see Appendix 1) for the changes in management proposed herein and titled as the May 2021 Revision. This document serves as the 2021 Revision to Amendment 1 to the N.C. Shrimp FMP. It documents the supporting data and rationale of the MFC for changing for the changed designation of SSNAs in Pungo, Scranton, Slade, South, Bond/Muddy, and Saucepan creeks as well as the Newport, Cape Fear and Lockwood Folly rivers to permanent SNAs. Rule changes for this revision are scheduled to be effective May 1, 2021. All other management strategies contained in Amendment 1 and the May 2018 Revision to Amendment 1 will remain in force until another revision, supplement, or amendment to the North Carolina Shrimp FMP is adopted.

X. REFERENCES CITED

- NCDEQ (North Carolina Department of Environmental Quality). 2016. North Carolina Coastal Habitat Protection Plan Source Document. NC Division of Marine Fisheries, Morehead City, NC, 487 p.
- NCDMF (North Carolina Division of Marine Fisheries). 2001. North Carolina Red Drum Fishery Management Plan. North Carolina Department of Environment and Natural Resources. North Carolina Division of Marine Fisheries. Morehead City, NC, 111 p.
- NCDMF. 2006. North Carolina Fishery Management Plan for Shrimp. North Carolina Department of Environment and Natural Resources, Division of Marine Fisheries, Morehead City, NC, 390 p.
- NCDMF. 2015a. North Carolina Shrimp Fishery Management Plan, Amendment 1. North Carolina Department of Environment and Natural Resources, Division of Marine Fisheries, Morehead City, NC. 514 p.
- NCDMF. 2015b. North Carolina Striped Mullet Fishery Management Plan, Amendment 1. North Carolina Department of Environment and Natural Resources, Division of Marine Fisheries, Morehead City, NC. 388 p.
- NCDMF. 2020. North Carolina Blue Crab (*Callinectes sapidus*) Fishery Management Plan Amendment 3. North Carolina Department of Environment Quality. North Carolina Division of Marine Fisheries. Morehead City, NC, 239 p.
- SAFMC (South Atlantic Fishery Management Council). 1998. Final habitat plan for the south Atlantic region: essential fish habitat requirements for fishery management plans of the South Atlantic Fishery Management Council. SAFMC, Charleston, SC, 457 p.

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Appendix 1. MFC motions for Amendment 1 to the North Carolina Shrimp FMP to change the designation of special secondary nursery areas that have not been opened to trawling in many years to permanent secondary nursery areas.

In February 2014, prior to the approval of the draft Shrimp FMP Amendment 1 for review by the Secretary of the Department of Environment and Natural Resources and the Joint Legislative Commission on Governmental Operations, the MFC passed a motion that became the final management strategy in Amendment 1:

Motion to accept the Division of Marine Fisheries recommendation for the Habitat and Water Quality Advisory Committee to consider changing designation of Special Secondary Nursery Areas that have not been opened to trawling since 1991 to Permanent Secondary Nursery Areas.

The commission gave its final recommendation for this management strategy and its associated rules on February 20, 2020 and implementation of the rules will come into effect May 1, 2021, unless otherwise specified.

Motion to select Option 2 [Change the designation of special secondary nursery areas that have not been opened to trawling in many years to permanent secondary nursery areas which would make them subject to additional gill net attendance under 03R .0112(b)(1).] as the preferred management option for the Shrimp FMP Amendment 1 Special Secondary Nursery Area Issue Paper.