January 2025 Spotted Seatrout Cold Stun Report

Lucas Pensinger
Matthew Zink
Melinda Lambert

May 2026

North Carolina Division of Marine Fisheries
3441 Arendell Street
P.O. Box 769
Morehead City, NC 28557

This document may be cited as:
Pensinger, L.G., M. Zink, and M. Lambert. 2026. January 2025 Spotted Seatrout Cold Stun. North Carolina Division of Marine Fisheries, Morehead City, N.C. 20 p.

ABSTRACT

Following a period of cold weather and a major winter storm with coastal snow accumulation ranging from 3- to 9-inches, the Division received reports of cold stunned Spotted Seatrout throughout coastal North Carolina. In addition to reports of cold stunned fish, water temperatures met established triggers, prompting the Director to issue a proclamation to close the Spotted Seatrout fishery. The closure was extended following the adoption of Amendment 1 to the Spotted Seatrout Fishery Management Plan. Division staff used data from NC Trip Ticket Program, the Marine Recreational Information Program (MRIP), the Division's Fishery Independent Gill Net Survey (Program 915), water temperature data downloaded from the Division's water temperature loggers (Program 909), and water temperature data downloaded from the Beaufort NOAA buoy to: 1) quantify if seasonal changes in relative abundance are related to colder winter temperatures, 2) visually assess if colder winters corresponded with changes in the length composition of Spotted Seatrout, and 3) identify the scope (spatial extent) of affected Spotted Seatrout from known cold stuns. Data and analyses in this report do not include any potential effects from the cold stun which occurred in the winter of 2026.

Table of Contents

ABSTRACT 2
INTRODUCTION 4
METHODS 5
Analysis Overview 5
Study Area and Data 6
sdmTMB Index of Relative Abundance 6
Abundance and winter water temperatures 6
Length Composition 7
RESULTS 7
sdmTMB Index of Relative Abundance 7
Abundance and Winter Water Temperatures 7
Length Composition 7
DISCUSSION 8
sdmTMB Index of Relative Abundance and Winter Water Temperatures 8
Length Composition 8
Recommendations 9
LITERATURE CITED 10
TABLES 12
FIGURES 13
APPENDICES 17
Appendix 1 17
Appendix 2 19

INTRODUCTION

Spotted Seatrout that over-winter in estuarine environments in North Carolina are susceptible to periodic cold stun events which occur when winter water temperatures drop below the minimum temperature (3–5 °C) Spotted Seatrout can withstand (Ellis et al. 2017). These events are associated with sudden or prolonged cold temperatures or run-off of snow and/or ice melt. While cold stun events are not always lethal, Spotted Seatrout exposed to sub-optimal water temperatures (7 °C) can become lethargic or immobile making them unable to escape to warmer water (Ellis et al. 2017). This can lead to mass Spotted Seatrout mortality events which can lead to declines in population abundance (NCDMF 2012; Ellis et al. 2018; NCDMF 2022; Brooks et al. 2024). The North Carolina Division of Marine Fisheries (Division) began developing the original Spotted Seatrout Fishery Management Plan (FMP) in 2009. Since then, Spotted Seatrout cold stun events occurred in the winters of 2009, 2010, 2011, 2014, 2015, and 2018, 2025, and 2026 (NCDMF 2012, 2016).

In the original Spotted Seatrout FMP, the North Carolina Marine Fisheries Commission (NCMFC) directed the Division to remain status quo regarding cold stun management with the assumption that the Director would use proclamation authority to temporarily close the Spotted Seatrout fishery in the event of a "catastrophic" cold stun (NCDMF 2012). The Director used the adaptive management guidelines developed following adoption of the Spotted Seatrout FMP to close the Spotted Seatrout fishery due to cold stun events in 2011 and 2014 through June 15. Peak Spotted Seatrout spawning in North Carolina occurs between May and June. Closing Spotted Seatrout harvest through June 15 following a significant cold stun allows surviving Spotted Seatrout to escape harvest through most of the peak spawning season, potentially increasing recruitment the year after a cold stun. Public reports during the 2015 cold stun were inconsistent with what Division staff observed during their investigations, leading many stakeholders to disagree with the Division's decision not to close the Spotted Seatrout fishery in 2015 citing subjectivity in the Director's discretion whether to close to fishery. In 2016, the Division enacted new cold stun guidelines which considered the size and scope of a cold kill and water temperature triggers of 5 °C (41 °F) for eight consecutive days and/or 3 °C (37.4 °F) for a consecutive 24-hour period (NCDMF 2016). Water temperature triggers were based on survival probabilities of Spotted Seatrout following prolonged exposure to water temperatures below their thermal tolerance (Ellis et al. 2017). The Director used these new guidelines to close the Spotted Seatrout fishery following the 2018 cold stun event.

In January 2025, coastal North Carolina experienced an extended period of cold weather beginning with multiple nights of below freezing temperatures and days of near freezing temperatures in mid-January. On January 21, most areas of coastal North Carolina were affected by a major winter storm with snow fall accumulation ranging from three to nine inches. The storm was followed by almost a week of unusually cold temperatures with multiple days of temperatures not rising above freezing, lows in the single digits, and some areas experiencing sub-zero wind chills.

The Division began receiving reports of cold stunned Spotted Seatrout on January 13, 2025 with early, confirmed reports from areas off the Pamlico River (Chocowinity Bay), the Albermarle Sound (Little Alligator River), and the Currituck Sound (Currituck Sound Bridge and Wanchese). However, widespread reports from the public and observations by Division staff of cold stunned Spotted Seatrout continued throughout January 2025. Reports were confirmed throughout coastal North Carolina from the Little Alligator River to Topsail Island with most confirmed reports occurring in the Little Alligator River, Croatan Sound, and the central rivers and creeks. For example, multiple reports were confirmed along the Neuse River (Clubfoot Creek, Oriental, Reedy Creek, Smith Creek, South River, Trent River), the

Newport River (Gallant's Channel/Beaufort Inlet Seafood, Piver's Island, southern shore of Harlowe Creek off Country Club Road), and the Little Alligator River and Croatan Sound (Little Alligator River, Second Creek, Spencer's Creek). Additional reports of dead Spotted Seatrout were confirmed in the New River (Chadwick Bay and Fullard's Creek), the Currituck Sound (Currituck Sound Bridge and Wanchese), and Onslow County (Freeman Creek). Division staff also observed mortality of other species including Bluefish; Menhaden; Red Drum; Sheepshead; Southern Flounder; thousands of Striped Mullet; and 10s of thousands of Atlantic Croaker, Spot, and Weakfish.

Division water temperature loggers recorded water temperatures below both the 5 °C eight-day trigger and the 3 °C 24-hour trigger during the January 2025 cold stun event. Water temperature loggers at 12 stations located in known or ideal Spotted Seatrout winter habitats – from Currituck Sound near the Virginia border to Tucker Creek off the Neuse River – all recorded water temperatures which met the eight-day trigger. However, water temperature loggers at 40 stations across all areas of the state recorded temperatures that met the 3 °C for a consecutive 24-hours trigger. Some stations (water depth >2 m) have a shallow and a deep logger to measure potential water temperature gradients in areas where deeper water may act as a thermal refuge for Spotted Seatrout. In almost all cases where temperatures met the 3 °C trigger and water depth was deep enough for the deployment of two loggers at a station; both the shallow and deep loggers met the trigger indicating Spotted Seatrout were likely unable to find deeper thermal refuge in these areas.

As a result of confirmed reports of cold stunned Spotted Seatrout and water temperature data, the Director issued Proclamation FF-11-2025 (Appendix 1) to close the Spotted Seatrout fishery effective at 5:00 p.m. on January 24, 2025 until 11:59 p.m. on June 15, 2025. Amendment 1 to the Spotted Seatrout FMP was adopted in March 2025 and included a cold stun adaptive management strategy which extended this closure through June 30 (NCDMF 2025). Following the adoption of Amendment 1, the Director issued Proclamation FF-15-2025 (Appendix 2) which extended the cold stun closure until 11:59 p.m. on June 30, 2025.

Division staff used data from NC Trip Ticket Program, the Marine Recreational Information Program (MRIP), the Division's Fishery Independent Gill Net Survey (Program 915), the Division's fish house sampling (primarily Program 461), water temperature data downloaded from the Division's water temperature loggers (Program 909), and water temperature data downloaded from the Beaufort NOAA buoy to: 1) quantify if seasonal changes in relative abundance are related to colder winter temperatures, 2) visually assess if colder winters corresponded with changes in the length composition of Spotted Seatrout, and 3) identify the scope (spatial extent) of affected Spotted Seatrout from known cold stuns.

METHODS

Analysis Overview

Recreational and commercial Spotted Seatrout harvest data in the fall following a cold stun was compared to harvest data in years without cold stuns and harvest data between different cold stun years. Using data collected from Program 915, the difference between fall and spring relative abundance indices were compared to the number of degree days below 7 °C (Brooks et al. 2024) and weighted length quantiles were calculated and compared over time. Water temperature data from Program 909 was used to evaluate the spatial extent of the cold stun using water temperature triggers (NCDMF 2016; Ellis et al. 2017).

Study Area and Data

Data used in this analysis were from Program 915 from 2005 to 2025. Data were isolated to Pamlico Sound, Pamlico River, Neuse River, and Pungo River. The survey occurs annually from February 15th to December 15th and uses a stratified random sampling design in each region, using multiple mesh gill nets (3.0-6.5 inch stretched mesh, ½ inch increments). Indices of relative abundance are calculated as the number of fish per 12-hour soak time per 240 yards of net for all regions and strata combined.

sdmTMB Index of Relative Abundance

A geostatistical generalized linear mixed model (GLMM) with Gaussian Markov random fields (GMRFs) was fit to the Program 915 data at a seasonal timestep. The spring season included March through May, and the fall season included September through November. Geodata were converted to UTM-18N for coastal North Carolina and catch per unit effort (CPUE) was calculated as the total number caught divided by the hours fished. The model was specified and fit using the sdmTMB package (Anderson et al. 2025) in R (R core team, 2025). Each season (e.g., spring 2015, fall 2015) was included as a fixed effect, and spatiotemporal random fields were included to address the spatial autocorrelation among sample sites. Data was not available for spring and fall 2020, and spring 2021 due to COVID. These seasons were omitted and specified as extra time (i.e., interpolated over) in the sdmTMB model. The seasonal time step was chosen to generate estimates of relative abundance in the fall and spring to: 1) capture changes in abundance over the winter season when cold stuns occur, and 2) limit the influence of other processes that drive changes in abundance such as recruitment, fishing mortality, and movement.

The model was specified as a delta model with a binomial distribution with a logit link and a gamma distribution with a log link for the encounter and catch rate, respectively. Model fit was evaluated with DHARMa residuals, which takes all parameters at their maximum likelihood estimates and simulates new observations. Model residuals were then visually inspected with quantile-quantile plots.

Abundance and winter water temperatures

An analysis similar to Brooks et al. (2024) was conducted to evaluate the relationship of cold stuns and indices of relative abundance for spotted sea trout. Winter cold stuns are hypothesized to cause a decline in abundance in the following spring and thus we evaluated the change in abundance from fall to the following spring as it relates to winter water temperatures. The threshold for a cold day was defined as an average daily sea surface temperature below 7 °C. This temperature threshold was used by Brooks et al. 2024 and stems from laboratory and field work that showed number of days below 7 °C resulted in increased natural mortality in spotted seatrout (Ellis et al. 2017). Program 915 does not sample in January and has limited sampling in December and February. Therefore, we used the historic water temperature data from the National Data Buoy Center for Beaufort Inlet, NC (NOAA National Data Buoy Center, 2025) to quantify the winter water temperatures. Data from the Buoy Center spanned 2005 to 2025 and average daily water temperatures were calculated for the months of December, January, and February. Temperature data from February 2008, and January/February 2009 were missing data from the Buoy Center. We calculated the difference in relative abundance from fall to spring as

$$y = \frac{I_{S,t+1} - I_{F,t}}{I_{F,t}}$$

Where $I_{S,t+1}$ is the index of relative abundance in the spring season in year $t + 1$ and $I_{F,t}$ is the index of relative abundance in the fall of year t. A positive or negative y would indicate

an increase or decrease in abundance after winter, respectively. We used linear regression to investigate the relationship between the difference in relative abundance and the number of days with an average daily water temperature below 7 °C. The winter of 2019-2020 and 2020-2021 were omitted due to COVID driven data limitations.

$$y = \beta_0 + \beta_1 X_1 + \epsilon$$

Where *y* is the relative difference, β_0 is the intercept, X_1 is the number of days where SST was below 7°C, and ϵ is a normally distributed error term.

Length Composition

Weighted length quantiles were calculated for the P915 catch of Spotted Seatrout. The weighted length quantiles track the size distribution of the fish caught in the respective program over time: this can be a useful exercise to determine the effect of fishing, or in this case cold stuns, on the size distribution of the population. Trends in size of catch provide a valuable indicator of the health of the stock as declines and condensing of length quantiles indicate smaller fish are available. Conversely, larger and expanding length quantiles indicate larger fish are available. Differences in sample sizes across length bins and years are controlled for in the weighting to create more robust estimates of the length quantiles. The more recent years in the time series are weighted more heavily than observations in the beginning of the time series. For an in-depth explanation, see Akinshin (2023). The weighted quantile method was implemented with the cNORM package (Lenhard et al. 2018) in R (R core team 2025).

RESULTS

sdmTMB Index of Relative Abundance

The model successfully converged on a solution and residual plots were not problematic, indicating an adequate fit to the data. The index model was fit to 7,820 sampling events. From 2004 to 2018 the index of relative abundance varied with no global trend. In 2019, abundance peaks and then, while variable, is sustained at a higher level than the earlier portion of the time series (Figure 1). The spring seasons in 2010, 2011, 2014, 2015, and 2018 all have lower indices of abundance compared to the prior fall indices, but subsequent fall seasons see an increase in abundance within the range observed in the time series. Visually, cold stun years do not correspond to consistent or sustained low indices of abundance.

Abundance and Winter Water Temperatures

A total of 18 winters were included in the model. The seasonal difference in abundance from fall to spring from the sdmTMB model was significantly related to the number of cold days (p = 0.01) (Table 1). The number of cold days, or winter severity, explained 36% of the variation in the seasonal differences of relative abundance (R^2 = 0.357). Greater winter severity had a significant, negative impact on the subsequent spring abundance (Figure 2).

Length Composition

The weighted length quantiles of Spotted Seatrout were generally stable across the annual (February-December) time series with the median length (50th quantile) remaining around 420 mm from 2008 through 2019. Following the 2020-2021 data gap, a steady upward trend in sizes was observed, with the median size reaching approximately 440 mm by 2025 (Figure 3). The spring (April-June) time series showed higher inter-annual variability with

the median length dropping significantly in 2011, 2016, and 2019, contrasting with the more stable annual variables (Figure 4).
The two data series also differed in the timing of maximum size expansion. The annual distribution data recorded its peak size range in 2015 with the 90th quantile reaching approximately 544 mm. However, the spring data reached its maximum size range later in the time series in 2019 where the 90th quantile was 538 mm.

DISCUSSION

sdmTMB Index of Relative Abundance and Winter Water Temperatures

Spotted Seatrout in North Carolina are near the northern extent of its range and overwinter in shallow creeks and bays making Spotted Seatrout more likely to experience population-level effects from cold stun events than other estuarine species in North Carolina such as Weakfish, adult Red Drum, and Southern Flounder (Bacheler et al. 2008; McGrath and Hilton 2017; Ellis et al. 2018; Krause et al. 2020); however, the duration of these population-level effects is unknown. Population-level effects are seen in the relationship between winter severity and Spotted Seatrout relative abundance the following spring and in decreased relative abundance in the spring following a cold stun. The increase in Spotted Seatrout abundance by the subsequent fall following a cold stun implies that the population-level effects of a cold stun may be short-lived (Figure 1). Spotted Seatrout life history may at least partly explain the apparent short-lived effects of a cold stun and the resiliency of the population. Spotted Seatrout grow quickly and mature early with most Spotted Seatrout able to reproduce by age one. Furthermore, Spotted Seatrout are batch spawners and highly fecund meaning female fish spawn multiple times during a spawning season and have the potential to produce many offspring in a single spawning season (Nieland et al. 2002; Roumillat and Brouwer 2004; Murphy et al. 2010). Spotted Seatrout that survive a cold stun are likely able to reproduce the following spawning season even if they were just spawned the season prior. Fast growth rates could theoretically lead to fish spawned early in the spawning season following a cold stun – for example, Spotted Seatrout spawned late in April or early in May after a cold stun – showing up in the Program 915 fall relative abundance index.

The Division response to a significant cold stun of closing Spotted Seatrout harvest until at least partway through the peak spawning season may also help explain some of the increase in relative abundance by the subsequent fall. Closing harvest allows surviving Spotted Seatrout to escape harvest and allows more fish a chance to reproduce during the subsequent spawning season. Interestingly, Spotted Seatrout harvest in the summer and fall following a cold stun is much less than harvest during the same months of a non-cold stun year (Figure 5). While decreased Spotted Seatrout harvest could be a sign of decreased population size, abundance indices the fall after a cold stun indicate there may just be fewer legal sized Spotted Seatrout available rather than fewer fish overall. The decrease in recreational harvest during the summer and fall following a cold stun is noticeably larger than the decrease in commercial harvest. In addition to fewer legal sized Spotted Seatrout available for harvest, recreational anglers could be consciously choosing not to harvest Spotted Seatrout even after harvest reopens.

Length Composition

Weighted length quantiles did not indicate concerning trends following cold stun events. Observations from Program 915 and the commercial catch are inherently constrained by gear and mesh-specific selectivity, meaning the resulting size distributions characterize only the portion of the stock susceptible to the multi-mesh configurations used. Despite the gear selectivity, distinct trends in size distribution remain discernable.

The absence of long-term size truncation in either time series suggests the spotted seatrout stock maintains a robust and stable size distribution, remaining resilient to periodic winter cold stun events. The relative stability of the annual length distributions in contrast to the variability observed in the spring distributions suggests that while cold stun events could immediately influence size structure, they may not result in a permanent size structure shift. While the contractions in the spring-specific data could signify the mortality or thermal displacement of vulnerable cohorts, the rapid recovery of the size distributions after significant drops is consistent with the life-history characteristics of spotted seatrout, specifically rapid growth and early maturation. Since recruitment to the spawning stock can occur at Age-1, the replenishment of depleted size classes can occur quickly after mortality events. Management measures, including spawning season closures, likely facilitate the retention of larger, more fecund females. The preservation of high spawning potential protects the population's size structure despite episodic declines in relative abundance.

Recommendations

The scope of the January 2025 cold stun encompassed the entire state with water temperatures below the 24-hour trigger (Figure 6) and confirmed cold stun reports from just below the NC-VA border to Wilmington. Despite the widespread nature of the cold stun and an initial decrease in Spotted Seatrout abundance in the spring of 2025, fall abundance increased in a similar fashion to previous cold stuns (Figure 1). Additionally, there was no evidence of age or size class truncation following the January 2025 cold stun. When only considering the January 2025 cold stun, the Division does not currently recommend additional cold stun adaptive management measures. However, the January 2025 cold stun cannot be properly evaluated as a standalone event.

Cold weather in December 2025 led to isolated but confirmed reports of cold stunned Spotted Seatrout in Queen's Creek around Swansboro with additional unconfirmed reports in Bear Creek and the Newport River. Then, in January of 2026, North Carolina experienced a severe cold stun for the second year in a row. Based on confirmed cold stun reports and preliminary water temperature analysis, it appears the January 2026 cold stun was likely much more severe than the January 2025 cold stun. When 2026 data are available, Division staff will evaluate the combined effect on the Spotted Seatrout population of cold stuns in back-to-back years using similar methodologies as those used in this report and determine whether additional cold stun adaptive management measures are recommended. Quantifying population level effects of cold stuns would require a stock assessment that can incorporate the effects of fishing and recruitment to partition out the natural mortality associated with cold stuns.

LITERATURE CITED

Akinshin, A. 2023. Weighted quantile estimators. *arXiv preprint arXiv:2304.07265*.

Anderson, S. C., E.J. Ward, P.A. English, L.A. Barnett, and J.T. Thorson. (2025). sdmTMB: an R package for fast, flexible, and user-friendly generalized linear mixed effects models with spatial and spatiotemporal random fields. Journal of Statistical Software *115*:1–46.

Bacheler, N.M., J.E. Hightower, L.M. Paramore, J.A. Buckel, and K.H. Pollock. 2008. An age-dependent tag return model for estimating mortality and selectivity of an estuarine-dependent fish with high rates of catch and release. Transactions of the American Fisheries Society 137:1422–1432.

Brooks, J., J. Buckel, and J. Cao. 2024. Quantifying intra-annual changes in abundance and distribution to identify the magnitude and scale of potential mortality events. Estuarine, Coastal and Shelf Science 311:109009.

Ellis, T.A., J.A. Buckel, J.E. Hightower, and S.J. Poland. 2017. Relating cold tolerance to winterkill for Spotted Seatrout at its northern latitudinal limits. Journal of Experimental Marine Biology and Ecology 490:41–51.

Ellis, T.A., J.A. Buckel, and J.E. Hightower. 2018. Relative importance of fishing and natural mortality for Spotted Seatrout (*Cynoscion nebulosus*) estimated from a tag-return model and corroborated with survey data. Fisheries Research 199:81–93.

Krause, J.R., J.E. Hightower, S.J. Poland, and J.A. Buckel. 2020. An integrated tagging and catch-curve model reveals high and seasonally-varying natural mortality for a fish population at low stock biomass. Fisheries Research 232.

Lenhard, A., W. Lenhard, and S. Gary. 2018. Continuous Norming (cNORM). The Comprehensive R Network, Package cNORM, available: https://CRAN.R-project.org/package=cNORM.

McGrath, P.E. and E.J. Hilton. 2017. Temperature selectivity and movement patterns of speckled trout. Viriginia Institute of Marine Science, College of William and Mary.

Murphy, M.D., D. Chagaris, and D. Addis. 2010. An assessment of the status of Spotted Seatrout in Florida waters through 2009. Florida Fish and Wildlife Conservation Commission, Tallahassee, FL.

NCDMF. 2012. North Carolina Spotted Seatrout fishery management plan. North Carolina Division of Marine Fisheries, Morehead City, NC. 360 p.

NCDMF 2016 Internal guidelines for adaptive management for cold stun closures. Noth Carolina Division of Marine Fisheries, Morehead City, North Carolina. 12p.

NCDMF. 2022. Stock assessment of Spotted Seatrout, *Cynoscion nebulosus*, in Virginia and North Carolina water, 1991–2019. North Carolina Division of Marine Fisheries, Morehead City, NC. 137 p.

NCDMF. 2025. North Carolina Spotted Seatrout fishery management plan, Amendment 1. North Carolina Division of Marine Fisheries, Morehead City, NC. 110p.

Nieland, D.L., R.G. Thomas, and C.A. Wilson. 2002. Age, growth, and reproduction of Spotted Seatrout in Barataria Bay, Louisiana. Transactions of the American Fisheries Society 131(2):245–259.

R Core Team (2025). R: A Language and Environment for Statistical Computing. R Foundation for Statistical Computing, Vienna, Austria. <https://www.R-project.org/>.

Roumillat, W.A. and M.C. Brouwer. 2004. Reproductive dynamics of female Spotted Seatrout (*Cynoscion nebulosus*) in South Carolina. Fishery Bulletin 102(3):473–487.

TABLES

Table 1. Results from the linear regression relating the difference in seasonal abundance (fall to spring) to the number of days where water temperature was below 7°C during December, January, and February.

Parameter	Estimate	Std. Error	t value	*p*
Intercept	-0.13	0.11	-1.28	0.22
Slope	-0.03	0.01	-2.98	>0.01*

FIGURES

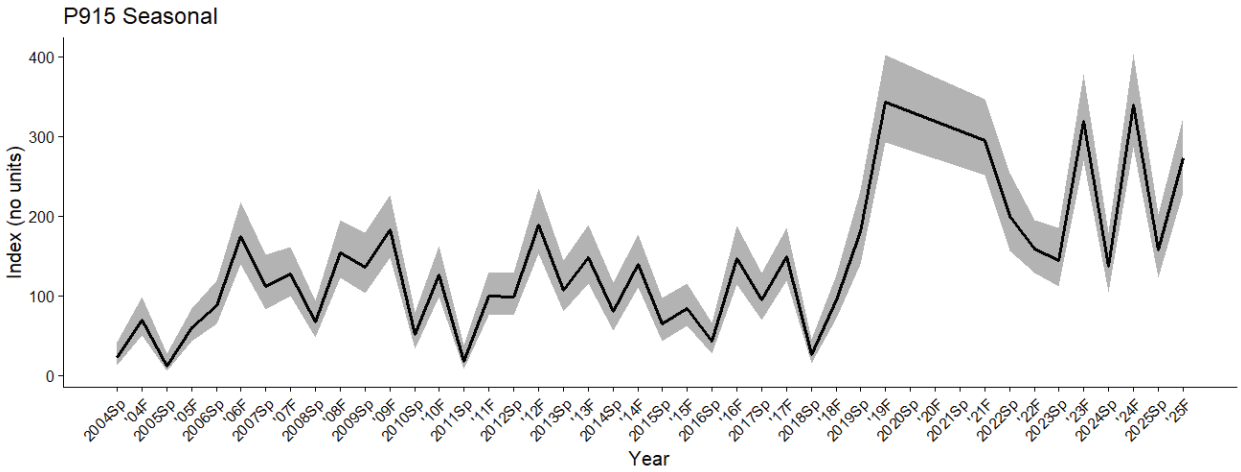


Figure 1. Index of relative abundance generated from the sdmTMB model. Gray shaded area corresponds to the 95% confidence interval. In this case the index is unitless and the values on the y-axis should be interpreted relative to other estimates. The spring season is indicated with year and “Sp”, while fall seasons are abbreviated years with “F” (e.g., 2010Sp and ‘10F).

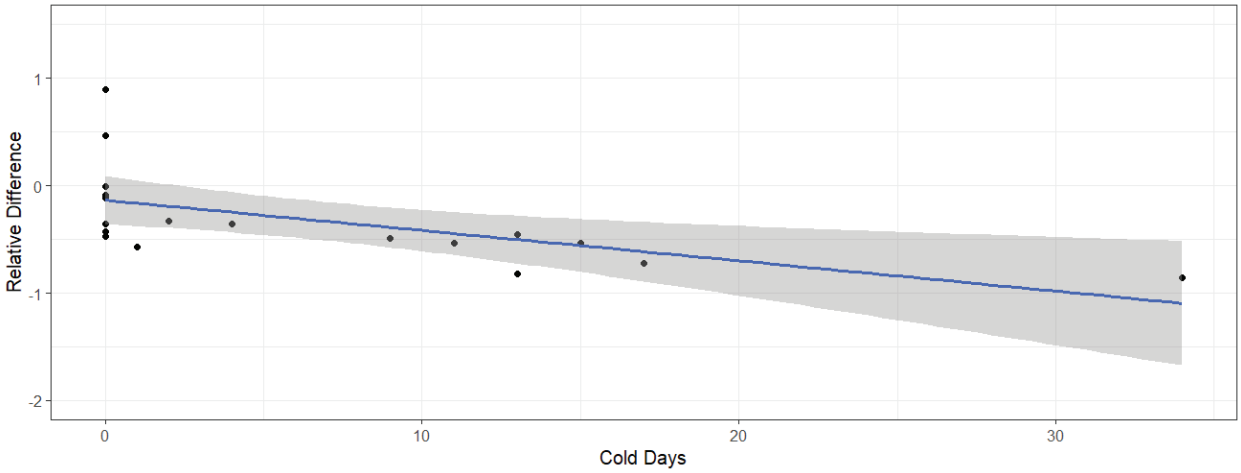


Figure 2. Results from the linear regression relating the difference in seasonal abundance (fall to spring) to the number of days where water temperature was below 7°C during December, January, and February. The gray shaded bar represents the 95% confidence interval.

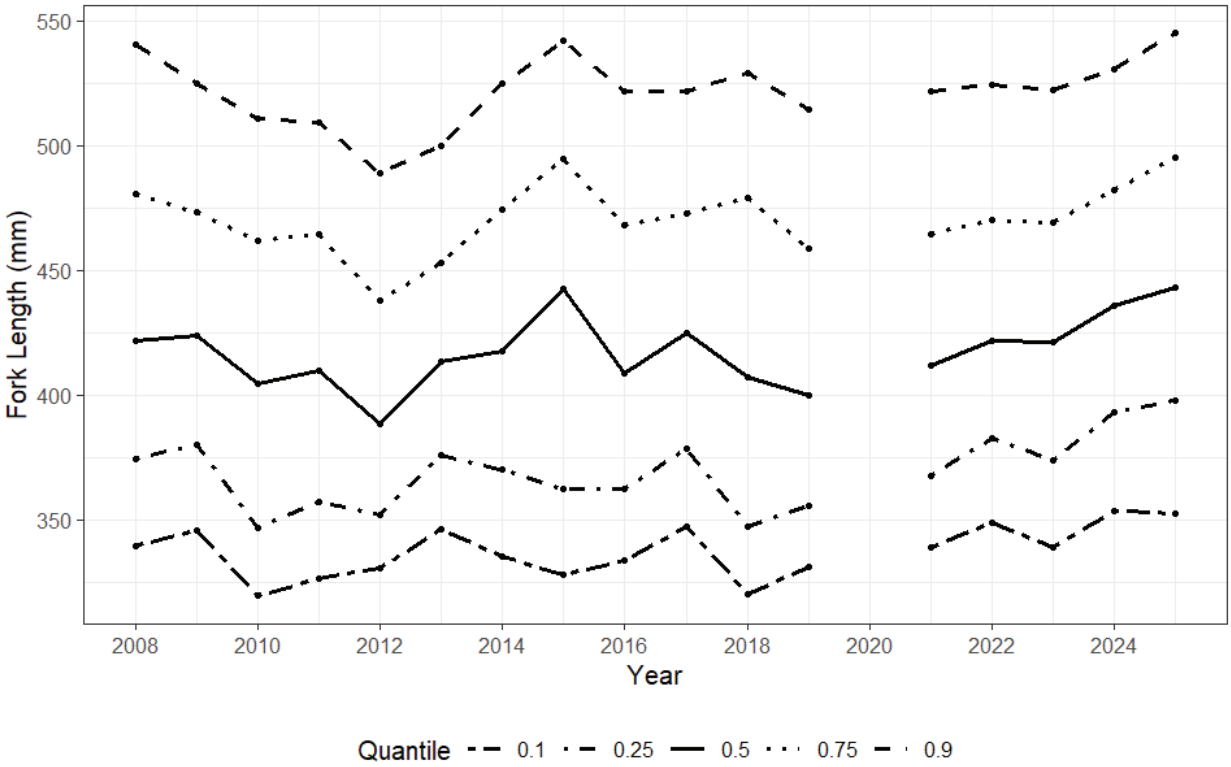


Figure 3. Weighted length quantiles for Spotted Seatrout caught annually from February through December, 2008 to 2025. Data gaps from 2020 to 2021 represent the incomplete data collection in 2020 and 2021 due to COVID-19.

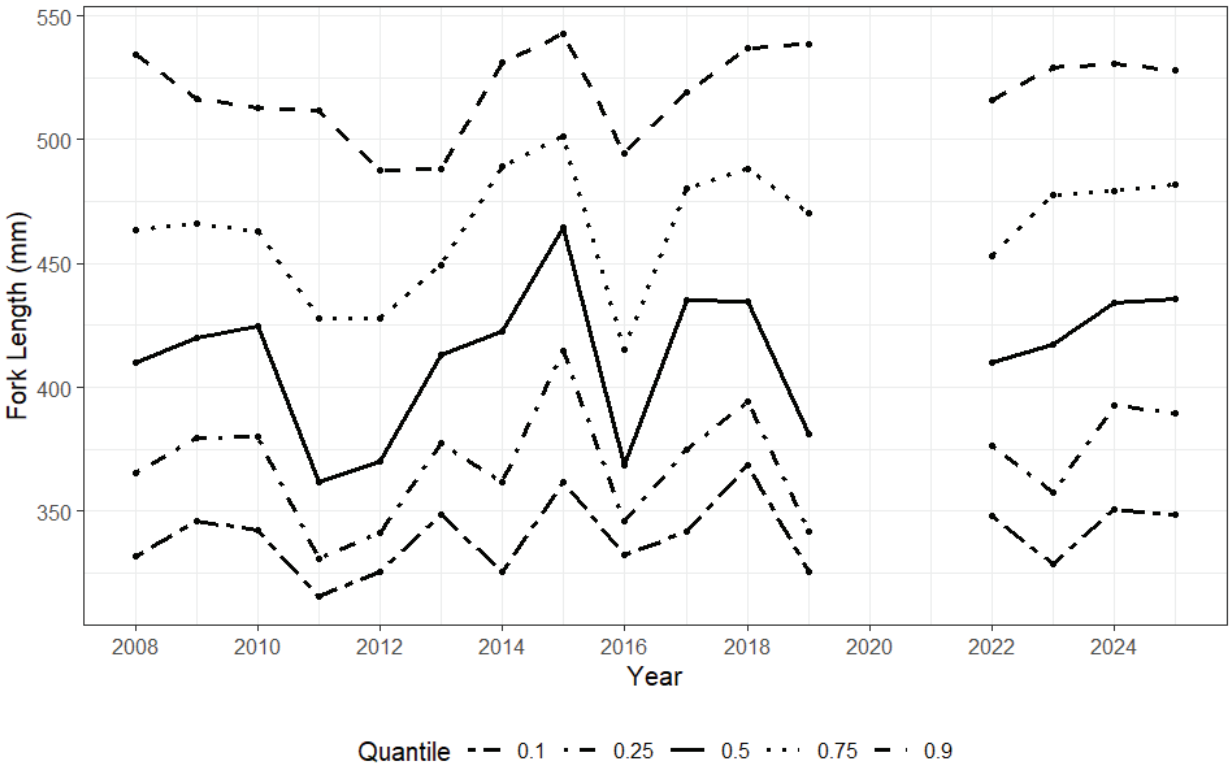


Figure 4. Weighted length quantiles for Spotted Seatrout caught annually from April through June, 2008 to 2025. Data gaps from 2020 to 2021 represent the incomplete data collection in 2020 and 2021 due to COVID-19.

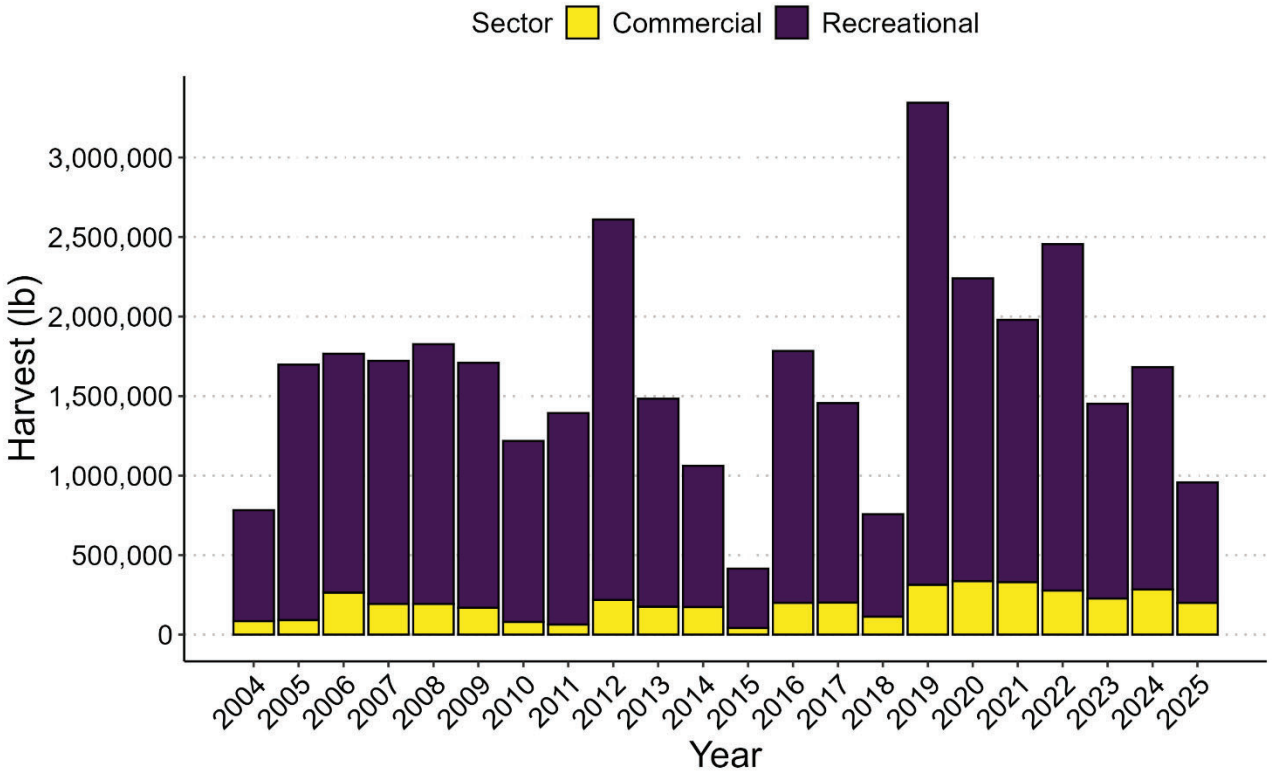


Figure 5. Annual Spotted Seatrout harvest in pounds by sector from July–December. These months are selected to account for any decrease in Spotted Seatrout harvest due to a closure of the fishery following a significant cold stun. In other words, Spotted Seatrout harvest is open July–December every year in the time series.

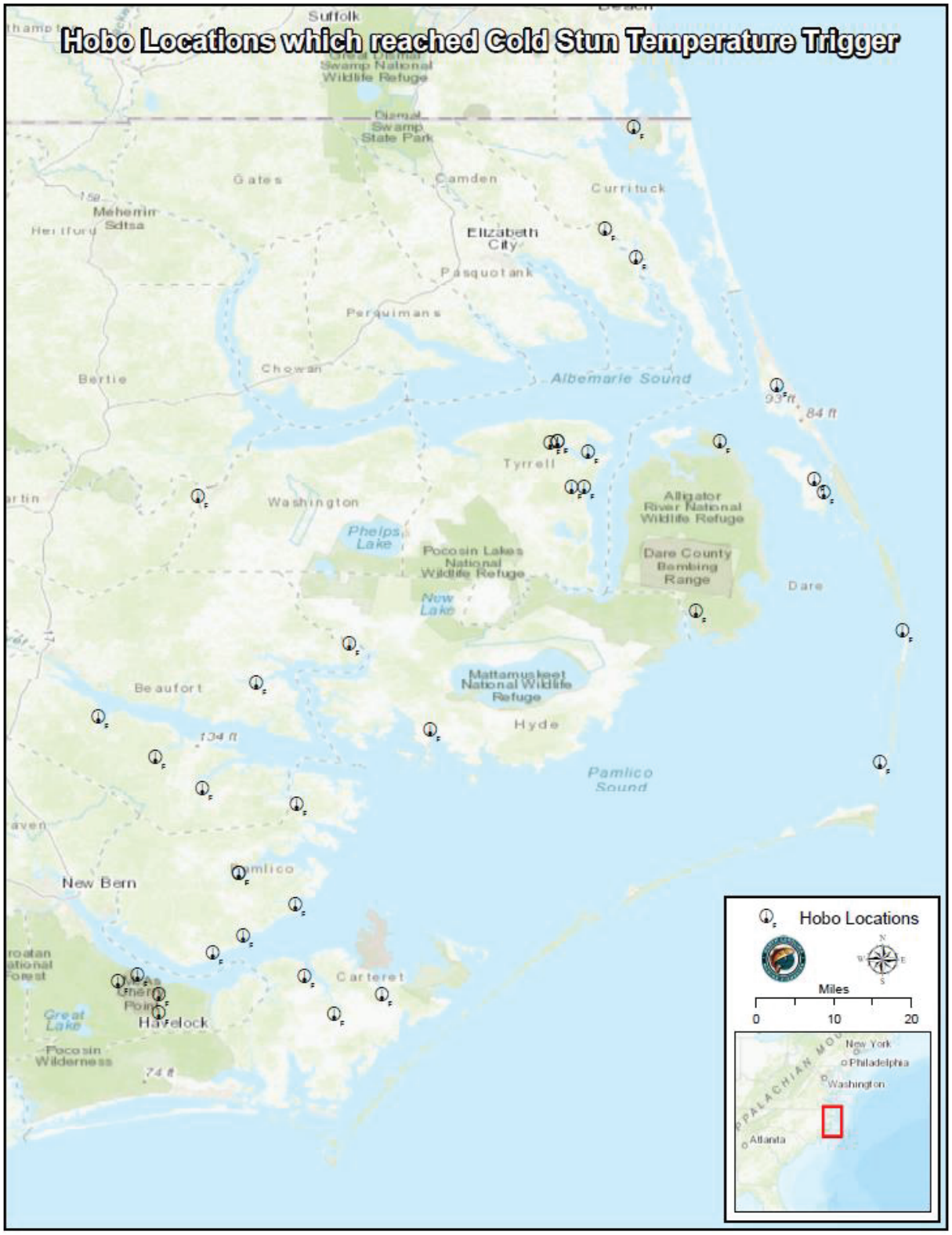


Figure 6. Map of Spotted Seatrout water temperature monitoring sites (Program 909) where water temperatures met or exceeded the 3 °C for a consecutive 24-hour period temperature trigger. Temperature triggers were met in all areas of the state.

APPENDICES

Appendix 1

FF-11-2025

PROCLAMATION

RE: SPOTTED SEATROUT – COASTAL AND JOINT FISHING WATERS INCLUDING THE ATLANTIC OCEAN - COMMERCIAL AND RECREATIONAL FISHERY CLOSURE – COLD STUN EVENTS

This proclamation supersedes proclamations FF-23-2018 and FF-24-2018, dated June 11, 2018. This proclamation closes the commercial and recreational spotted seatrout fishery in Coastal and Joint Fishing Waters due to cold stun events, in accordance with the N.C. Spotted Seatrout Fishery Management Plan. The spotted seatrout fishery will open June 15, 2025, by proclamation unless the reopening date is modified by the adoption of Amendment 1 to the N.C. Spotted Seatrout Fishery Management Plan.

Kathy B. Rawls, Director, Division of Marine Fisheries, hereby announces that effective **5:00 P.M., January 24, 2025,** following restrictions will apply to spotted seatrout **in Coastal and Joint Fishing Waters including the Atlantic Ocean**:

I. **HARVEST RESTRICTIONS**

It shall be **unlawful to possess, transport, buy, sell or offer for sale** spotted seatrout taken from Coastal and Joint Fishing Waters of North Carolina except dealers will have until 5:00 P.M., January 31, 2025 to dispose of unfrozen spotted seatrout in their possession taken prior to the closure.

II. **GENERAL INFORMATION**

A. This proclamation is issued under the authority of N.C.G. S. 113-134; 113-134.1; 113-170.4; 113-170.5; 113-182; 113-182.1; 113-221.1; 143B-289.52 and N.C. Marine

Fisheries Commission Rules 15A NCAC 03H .0103, 03M .0512 and 03M .0522.

B. It is unlawful to violate the provisions of any proclamation issued by the Fisheries Director under his delegated authority pursuant to N.C. Marine Fisheries Commission Rule 15A NCAC 03H .0103.

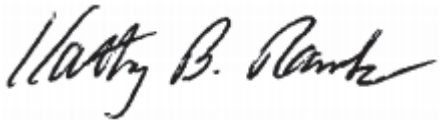
C. This action was taken to control fishing effort following a severe cold stun event under the approved management strategy in the N.C. Spotted Seatrout Fishery Management Plan.

D. It is the intent of the Fisheries Director to open the spotted seatrout season for commercial and recreational fishing by proclamation later in 2025 after surviving fish have had the opportunity to spawn in accordance with the N.C. Spotted Seatrout Fishery Management Plan.

E. In accordance with N.C. General Statute 113-221.1(c) all persons who may be affected by proclamations issued by the Fisheries Director are under a duty to keep themselves informed of current proclamations.

F. Contact the N.C. Division of Marine Fisheries, P.O. Box 769, Morehead City, NC 28557, phone 252-515-5500 or 800-682-2632 for more information or visit the division website at www.ncmarinefisheries.net.

G. **This proclamation closes the commercial and recreational spotted seatrout fishery due to cold stun events, in accordance with the N.C. Spotted Seatrout Fishery Management Plan. The spotted seatrout fishery will open June 15, 2025, by proclamation unless the reopening date is modified by the adoption of Amendment 1 to the N.C. Spotted Seatrout Fishery Management Plan.**



By: _____ Kathy B. Rawls, Director
DIVISION OF MARINE FISHERIES

January 22, 2025
3:30 P.M.

State of North Carolina | Division of Marine Fisheries
3441 Arendell Street | P.O. Box 769 | Morehead City, North Carolina 28557
252-515-5500

Appendix 2

FF-15-2025

PROCLAMATION

RE: SPOTTED SEATROUT – COASTAL AND JOINT FISHING WATERS INCLUDING THE ATLANTIC OCEAN - COMMERCIAL AND RECREATIONAL FISHERY CLOSURE – COLD STUN EVENTS

This proclamation supersedes proclamations FF-11-2025, dated January 22, 2025. This proclamation extends the closure of the commercial and recreational spotted seatrout fishery in Coastal and Joint Fishing Waters due to cold stun events, in accordance with Amendment 1 to the N.C. Spotted Seatrout Fishery Management Plan. The spotted seatrout fishery will open July 1, 2025 by proclamation. The proclamation opening the fishery will also specify size and bag limits and other restrictions consistent with Amendment 1.

Kathy B. Rawls, Director, Division of Marine Fisheries, hereby announces that effective **12:01 A.M., April 10, 2025,** following restrictions will apply to spotted seatrout **in Coastal and Joint Fishing Waters including the Atlantic Ocean**:

I. **HARVEST RESTRICTIONS**

It shall be **unlawful to possess, transport, buy, sell or offer for sale** spotted seatrout taken from Coastal and Joint Fishing Waters of North Carolina except dealers may possess frozen spotted seatrout landed from Coastal and Joint Fishing Waters that were in their possession prior to the January 22, 2025, cold stun closure.

II. **GENERAL INFORMATION**

A. This proclamation is issued under the authority of N.C.G. S. 113-134; 113-134.1; 113-170.4; 113-170.5; 113-182; 113-182.1; 113-221.1; 143B-289.52 and N.C. Marine Fisheries Commission Rules 15A NCAC 03H .0103, 03M .0512 and 03M .0522.

B. It is unlawful to violate the provisions of any proclamation issued by the Fisheries Director under her delegated authority pursuant to N.C. Marine Fisheries Commission Rule 15A NCAC 03H .0103.

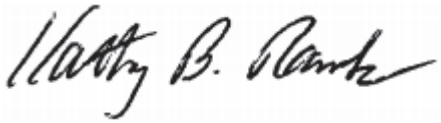
C. This action was taken to control fishing effort following a severe cold stun event under the approved management strategy in Amendment 1 to the N.C. Spotted Seatrout Fishery Management Plan.

D. It is the intent of the Fisheries Director to open the spotted seatrout season for commercial and recreational fishing by proclamation later in 2025 after surviving fish have had the opportunity to spawn in accordance with Amendment 1 to the N.C. Spotted Seatrout Fishery Management Plan.

E. In accordance with N.C. General Statute 113-221.1(c) all persons who may be affected by proclamations issued by the Fisheries Director are under a duty to keep themselves informed of current proclamations.

F. Contact the N.C. Division of Marine Fisheries, P.O. Box 769, Morehead City, NC 28557, phone 252-515-5500 or 800-682-2632 for more information or visit the division website at www.ncmarinefisheries.net.

G. **This proclamation extends the closure of the commercial and recreational spotted seatrout fishery due to cold stun events, in accordance with Amendment 1 to the N.C. Spotted Seatrout Fishery Management Plan. The spotted seatrout fishery will open July 1, 2025 by proclamation. The proclamation opening the fishery will also specify size and bag limits and other restrictions consistent with Amendment 1.**



By: _____ Kathy B. Rawls, Director
DIVISION OF MARINE FISHERIES

April 8, 2025
11:30 A.M.