**FISHERY MANAGEMENT PLAN UPDATE**
**SPOTTED SEATROUT**
**AUGUST 2026**

## STATUS OF THE FISHERY MANAGEMENT PLAN

### Fishery Management Plan History

| | | |
|---|---|---|
| Original FMP Adoption: | February 2012 | |
| Amendments: | Amendment 1 | March 2025 |
| Revisions: | None | |
| Supplements: | March 2014 | |
| Information Updates: | None | |
| Schedule Changes: | None | |
| Comprehensive Review: | July 2030 | |

Spotted Seatrout (*Cynoscion nebulosus*) is managed under the authority of two state and one interjurisdictional fishery management plans (FMP). The North Carolina Marine Fisheries Commission (MFC) currently manages Spotted Seatrout under Amendment 1 to the North Carolina Spotted Seatrout FMP (NCDMF 2025) and the North Carolina FMP for Interjurisdictional Fisheries (NCDMF 2022a). Prior to the adoption of Amendment 1 in March 2025, the Spotted Seatrout fishery was managed under Supplement A to the Spotted Seatrout Fishery Management Plan (NCDMF 2014). At its March 2025 business meeting, the MFC voted to adopt Amendment 1 which implemented a 14–20-in recreational slot limit with an allowance for one fish over 26-in, a 3-fish recreational bag limit, commercial harvest closures on Saturday and Sunday from January through September, commercial harvest closures from Friday through Sunday from October through December, and maintained the 75-fish commercial trip limit and 14-in commercial minimum size limit (Proclamation FF-31-2026).

The Atlantic States Marine Fisheries Commission (ASMFC) manages Spotted Seatrout in all Atlantic States who have a declared interest in the species. In addition to the ASMFC Spotted Seatrout FMP, the ASMFC manages Spotted Seatrout under the Omnibus Amendment to the Interstate Fishery Management Plans for Spanish Mackerel, Spot, and Spotted Seatrout (ASMFC 2011). The goals for the Omnibus Amendment are to bring the FMPs for the three species under the authority of the ASMFC Interstate Fishery Management Program Charter and bring compliance requirements to each state. Because the intent of the Omnibus amendment was to bring the ASMFC Spotted Seatrout FMP into compliance with the new ASMFC charter, management measures were not adjusted and the identified objectives and compliance requirements to the states of the Omnibus Amendment are the same as Amendment 1 to the ASMFC Spotted Seatrout FMP (ASMFC 1990) and are as follows:

- Manage the Spotted Seatrout fishery restricting catch to mature individuals (12-in minimum size limit).
- Manage the Spotted Seatrout stock to maintain appropriate spawning stock biomass (20% SPR).
- Develop research priorities that will further refine the Spotted Seatrout management program to maximize the biological, social, and economic benefits derived from the Spotted Seatrout population.

To ensure compliance with interstate requirements, North Carolina also manages this species under the North Carolina Fishery Management Plan for Interjurisdictional Fisheries (NCDMF 2022a). The goal of this FMP is to adopt fishery management plans, consistent with N.C. law, approved by the Mid-Atlantic Fishery Management Council, South Atlantic Fishery Management Council, or the ASMFC by reference and implement corresponding fishery regulations in North Carolina to provide compliance or compatibility with approved fishery management plans and amendments, now and in the future. The goal of these plans,

established under the Magnuson-Stevens Fishery Conservation and Management Act (federal council plans) and the Atlantic Coastal Fisheries Cooperative Management Act (ASMFC plans) are like the goals of the Fisheries Reform Act of 1997 to "ensure long-term viability" of these fisheries.

As required in the 2012 FMP, a stock assessment (NCDMF 2015) was completed on schedule (2014–2015), peer reviewed, approved for management, and presented to the MFC at its May 2015 business meeting. A new benchmark stock assessment began in late 2020 and was completed and accepted for use in management October 2022. Results from the 2022 Spotted Seatrout Stock Assessment showed that the North Carolina and Virginia stock of Spotted Seatrout is not overfished, but overfishing is occurring (NCDMF 2022b). The North Carolina Division of Marine Fisheries (DMF) completed Amendment 1 to the state FMP for Spotted Seatrout in 2024 and the MFC adopted Amendment 1 in March 2025 with management to reduce overall Spotted Seatrout harvest by approximately 27%, end overfishing, and ensure sustainable harvest.

### Management Unit

The management unit for Amendment 1 to the North Carolina Spotted Seatrout FMP (NCDMF 2025) includes all Spotted Seatrout within the Coastal and Joint Fishing Waters of North Carolina. The unit stock, or population unit, for North Carolina's assessment of Spotted Seatrout includes all Spotted Seatrout in North Carolina and Virginia. Virginia landings were included in the stock assessment of Spotted Seatrout because of the relatively higher rate of mixing observed between North Carolina and Virginia.

### Goal and Objectives

The goal of Amendment 1 to the North Carolina Spotted Seatrout FMP (NCDMF 2025) is to manage the Spotted Seatrout fishery to maintain a self-sustaining population that provides sustainable harvest based on science-based decision-making processes. The following objectives will be used to achieve this goal:

- Implement management strategies within North Carolina that end overfishing and maintain the Spotted Seatrout spawning stock abundance and recruitment potential.
- Promote restoration, enhancement, and protection of critical habitat and environmental quality in a manner consistent with the Coastal Habitat Protection Plan, to maintain or increase growth, survival, and reproduction of the Spotted Seatrout stock.
- Monitor and manage the fishery in a manner that utilizes biological, socioeconomic, fishery, habitat, and environmental data.
- Promote outreach and interjurisdictional cooperation regarding the status and management of the Spotted Seatrout stock in North Carolina and Virginia waters, including practices that minimize bycatch and discard mortality.

## DESCRIPTION OF THE STOCK

### Biological Profile

Spotted Seatrout range from Massachusetts to southern Florida and the Bahamas on the U.S. Atlantic Coast and continue through the Gulf of Mexico to the Yucatan Peninsula, Mexico (Murphy et al. 2006), however it is rare north of Virginia, United States. Genetic and tagging data support a single unit stock in Virginia and North Carolina (Ellis et al. 2019). Genetic data also shows New River, North Carolina is an area of complex, seasonal mixing between two genetically distinct populations (Ellis et al. 2019): Georgia through Cape Fear River, North Carolina, and Bogue Sound, North Carolina and north (O'Donnell et al. 2014; Ellis et al. 2019). Spotted Seatrout can tolerate a wide salinity range (euryhaline) and inhabit shallow coastal and estuarine waters throughout their range (Deaton et al. 2010). The North Carolina state record Spotted Seatrout weighed 12.5 lb, measured 33.5-in total length (TL), and was caught in the Lower Neuse River in 2022. The maximum reported age is 9 years in North Carolina for both male and female fish (NCDMF

2012). Most Spotted Seatrout in North Carolina are mature and reach an average size of 7.9 in for males and 9.9 in for females by age 1 with all males mature at 12 in and females at 15 in. Spawning in North Carolina occurs from April to October with peak spawn around May (Burns 1996). Spawning occurs within the first few hours after sunset (Luczkovich et al. 1999) and a single fish is capable of spawning multiple times (batch spawners) throughout the season. In South Carolina and Florida, older Spotted Seatrout were found to spawn more often than younger fish (Roumillat and Brouwer 2004; Lowerre-Barbieri et al. 2009). Estimates of the number of eggs a female can produce in a year from the Southeast and Gulf Coasts vary based on size, age, and range, from 3 million to 18 million per year (Nieland et al. 2002; Roumillat and Brouwer 2004; Murphy et al. 2011).

**Stock Status**

The 2022 North Carolina Spotted Seatrout stock assessment (NCDMF 2022b) indicated the Spotted Seatrout stock in North Carolina and Virginia is not overfished but overfishing is occurring (Figures 1 and 2).

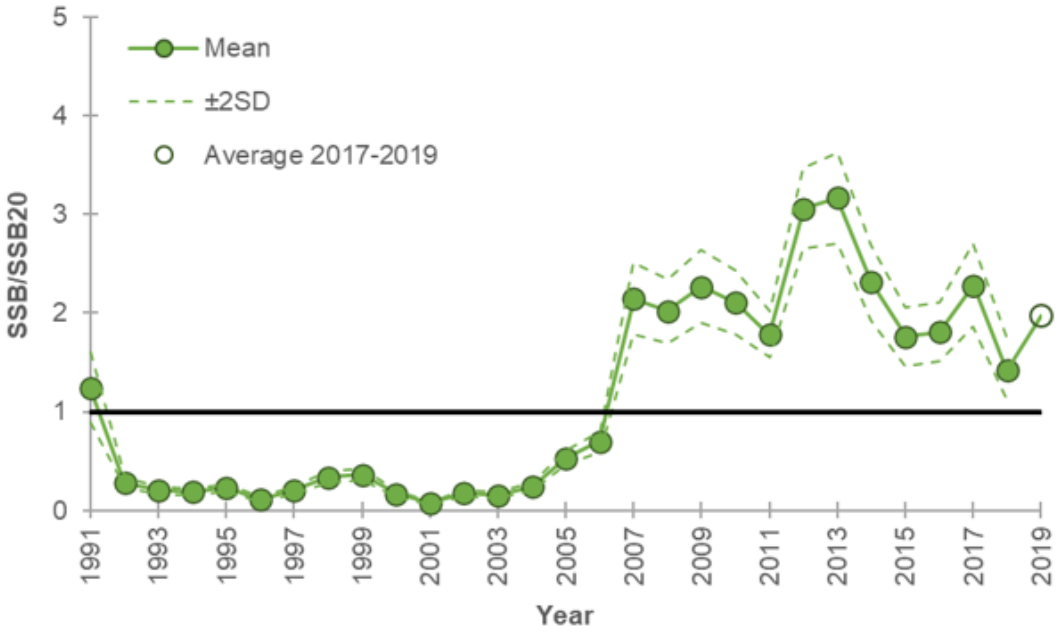


Figure 1. Annual predicted spawning stock biomass (metric tons), relative to the spawning stock biomass threshold reference point ($SSB/SSB_{20\%}$) for Spotted Seatrout, 1991–2019. 2019 is the terminal year for the most recent Spotted Seatrout stock assessment (NCDMF 2022b). The horizontal black line shows a ratio of one where $SSB = SSB_{20\%}$. The terminal-year estimate (open circle) is an average of the most recent three years weighted by the inverse CV values. Values above the horizontal, black line indicate the stock is not overfished.

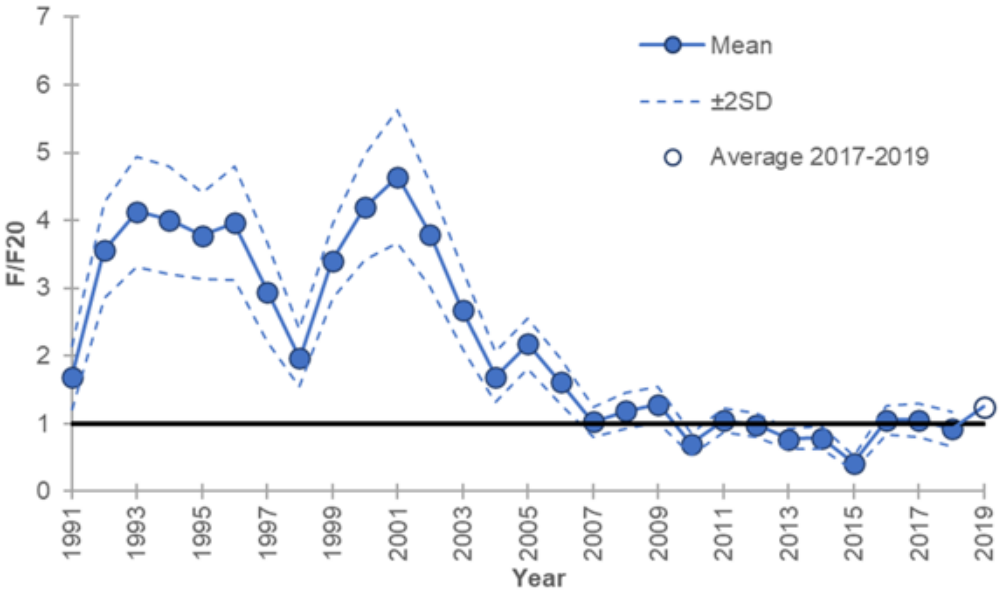


Figure 2. Annual predicted fishing mortality rates relative to the fishing mortality threshold reference point ($F/F_{20\%}$) for Spotted Seatrout, 1991–2019. 2019 is the terminal year for the most recent Spotted Seatrout stock assessment (NCDMF 2022b). The horizonal, black line shows a ratio of one where $F = F_{20\%}$. The terminal-year estimate (open circle) is an average of the most recent three years weighted by the inverse CV values. Values above the horizontal, black line indicate overfishing is occurring.

**Stock Assessment**

The 2022 benchmark stock assessment of Spotted Seatrout in North Carolina and Virginia was conducted using a seasonal size-structured assessment model applied to data characterizing commercial and recreational landings and discards, fisheries-independent survey indices, and biological data collected from 1991 through 2019 (NCDMF 2022b). The model included a seasonal time step (winter and non-winter seasons), and a nonstationary process was assumed for growth and winter natural mortality meaning growth and winter natural mortality were not set inputs but were estimated by the stock assessment model. The seasonal time step and nonstationary winter natural mortality assumption allows for capturing the cold-stun signals that have been observed for Spotted Seatrout. Both the observed data and the model predictions suggest a shift in population dynamics around the year 2004 when the survey index data became available. Lower fishing mortality ($F$) and higher spawning stock biomass (SSB) and recruitment with greater variation were predicted for the time period after 2004. This trend was also observed in the recreational landing and discards data, with higher values in the time period after 2004. The fishing year was defined as the biological year, March 1 through February 28 or 29, to incorporate cold stun mortalities within a single model year.

In 2019, estimated SSB was 4,980,243 lb (2,259 metric tons), which is greater than the threshold ($SSB_{20\%}$ = 2,519,884 lb or 1,143 metric tons; Figure 1), indicating the stock is not overfished. The terminal year estimate of $F$ ($F_{2019}$) was based on an inverse-variance weighted average of 2017–2019 $F$ values. The 2019 estimate of fishing mortality was 0.75, which is higher than the threshold ($F_{20\%}$ = 0.60), indicating the stock is experiencing overfishing (Figure 2).

## DESCRIPTION OF THE FISHERY

### Current Regulations

In 2025, DMF managed Spotted Seatrout predominately through Amendment 1 to the Spotted Seatrout Fishery Management Plan adopted by the MFC at their March 2025 business meeting. Management consistent with Amendment 1 was implemented when the Spotted Seatrout fishery reopened in July 2025 following a closure of the fishery due to a severe cold stun in January 2025. Recreational management includes a bag limit of three fish, a 14- to 20-in slot limit with an allowance for one fish over 26-in, and harvest allowed 7 days a week. Commercial management includes a 14-in minimum size limit, a trip limit of 75 fish, a Saturday to Sunday commercial harvest closure from January through September, and a Saturday through Monday commercial harvest closure October through December. Additionally, the DMF Director's authority to close the fishery by proclamation in the event of a serve cold stun was extended through June 30. For example, in 2025, the Spotted Seatrout commercial and recreational fishery was initially closed from January 24 through June 15 by proclamation (FF-11-2025) as outlined in the original Spotted Seatrout FMP. The proclamation was extended through June 30 following the adoption of Amendment 1 in March (Proclamation FF-15-2025). The MFC also adopted an adaptive management framework to allow for flexible management between FMP updates and a cold stun adaptive management framework for additional, temporary management in the event of an especially severe cold stun.

For both commercial and recreational sectors of the Spotted Seatrout fishery, landings are reported on the biological year which is from March through February of the following year (e.g., biological year 2023 is from March 2023 through February 2024). It is important to note that data from January and February of 2026 included in this annual update are preliminary.

### Commercial Fishery

Annual landings have been variable throughout the time series; however, landings increased sharply in 2019 have generally been higher compared to other years following the adoption of the original FMP in 2012 (Table 1; Figure 3). Although commercial landings in biological year 2025 (254,120 lb) decreased significantly compared to the previous year (603,497 lb; Table 1; Figure 3), Spotted Seatrout harvest was closed for almost 5 months in biological year 2025 (March–June 2025) and most of February 2026 due to significant cold stun events in January 2025 and late January/early February 2026. The increase in commercial landings from 2019–2024 was most likely due to several strong year classes and mild winters from 2019–2024, resulting in high numbers of available fish. Additionally, regulations limiting fall commercial fishing for other species, specifically southern flounder, likely influenced commercial Spotted Seatrout effort. The primary gear of harvest are estuarine gill nets (anchored and run around). Historically, anchored gill nets were responsible for most harvest but in more recent years the proportion of harvest from run around gill nets has increased with run around gill nets accounting for over 67% of Spotted Seatrout commercial harvest in 2025.

Table 1. Recreational harvest, recreational releases, commercial harvest, and combined recreational and commercial harvest of Spotted Seatrout from North Carolina for the biological years 1991–2025. The biological year is from March through February of the following year (e.g., biological year 2022 is from March 2022 through February 2023). Data from the January and February portion of biological year 2026 is preliminary.

| | Recreational | | | Commercial | |
|---|---|---|---|---|---|
| Biological Year | Number Landed | Number Released | Weight Landed (lb) | Weight Landed (lb) | Total Weight Landed (lb) |
| 1991 | 973,624 | 576,139 | 1,334,162 | 738,338 | 2,072,500 |
| 1992 | 908,233 | 449,085 | 1,390,746 | 482,192 | 1,872,938 |
| 1993 | 569,327 | 462,573 | 857,720 | 487,612 | 1,345,332 |
| 1994 | 798,937 | 443,785 | 1,207,520 | 479,249 | 1,686,769 |
| 1995 | 863,057 | 708,851 | 1,221,065 | 540,890 | 1,761,955 |
| 1996 | 575,357 | 638,588 | 699,078 | 142,742 | 841,820 |
| 1997 | 779,611 | 245,747 | 1,025,110 | 229,168 | 1,254,278 |
| 1998 | 702,274 | 112,315 | 1,125,898 | 372,674 | 1,498,572 |
| 1999 | 1,080,411 | 718,987 | 1,878,913 | 675,136 | 2,554,049 |
| 2000 | 728,906 | 170,075 | 1,095,729 | 192,130 | 1,287,859 |
| 2001 | 499,556 | 515,433 | 659,893 | 89,880 | 749,773 |
| 2002 | 746,908 | 1,349,460 | 957,824 | 222,625 | 1,180,449 |
| 2003 | 388,715 | 546,960 | 515,678 | 144,086 | 659,764 |
| 2004 | 570,836 | 597,766 | 744,870 | 127,443 | 872,313 |
| 2005 | 1,574,164 | 3,149,889 | 1,772,342 | 123,938 | 1,896,280 |
| 2006 | 1,432,937 | 1,581,255 | 2,050,493 | 385,530 | 2,436,023 |
| 2007 | 1,242,654 | 2,232,904 | 2,002,059 | 325,267 | 2,327,326 |
| 2008 | 1,331,397 | 2,219,488 | 2,035,508 | 318,413 | 2,353,921 |
| 2009 | 1,850,581 | 4,461,889 | 2,855,284 | 362,781 | 3,218,065 |
| 2010 | 623,597 | 7,739,240 | 1,264,714 | 112,703 | 1,377,417 |
| 2011 | 758,250 | 7,580,380 | 1,466,310 | 83,875 | 1,550,185 |
| 2012 | 1,666,056 | 4,819,440 | 2,762,953 | 315,128 | 3,078,081 |
| 2013 | 1,055,564 | 4,521,077 | 1,958,333 | 364,123 | 2,322,456 |
| 2014 | 737,345 | 3,655,134 | 1,325,748 | 226,394 | 1,552,142 |
| 2015 | 202,703 | 5,426,396 | 339,433 | 115,553 | 454,986 |
| 2016 | 1,130,681 | 6,225,783 | 2,013,905 | 273,848 | 2,287,753 |
| 2017 | 1,054,500 | 4,725,746 | 1,852,474 | 252,803 | 2,105,277 |
| 2018 | 499,562 | 16,426,445 | 728,401 | 151,750 | 880,151 |
| 2019 | 2,415,392 | 7,050,239 | 4,221,440 | 443,638 | 4,665,078 |
| 2020 | 1,605,722 | 5,428,135 | 2,827,646 | 653,092 | 3,480,738 |
| 2021 | 1,495,384 | 6,859,777 | 2,839,919 | 654,327 | 3,494,246 |
| 2022 | 1,852,135 | 11,462,872 | 3,463,284 | 520,950 | 3,984,234 |
| 2023 | 952,547 | 3,686,253 | 1,835,950 | 437,310 | 2,273,260 |
| 2024 | 1,273,509 | 5,368,175 | 2,418,680 | 603,497 | 3,021,357 |
| 2025 | 453,866 | 5,030,595 | 773,427 | 254,120 | 1,027,547 |
| Mean | 1,011,266 | 3,633,911 | 1,643,500 | 340,092 | 1,983,592 |

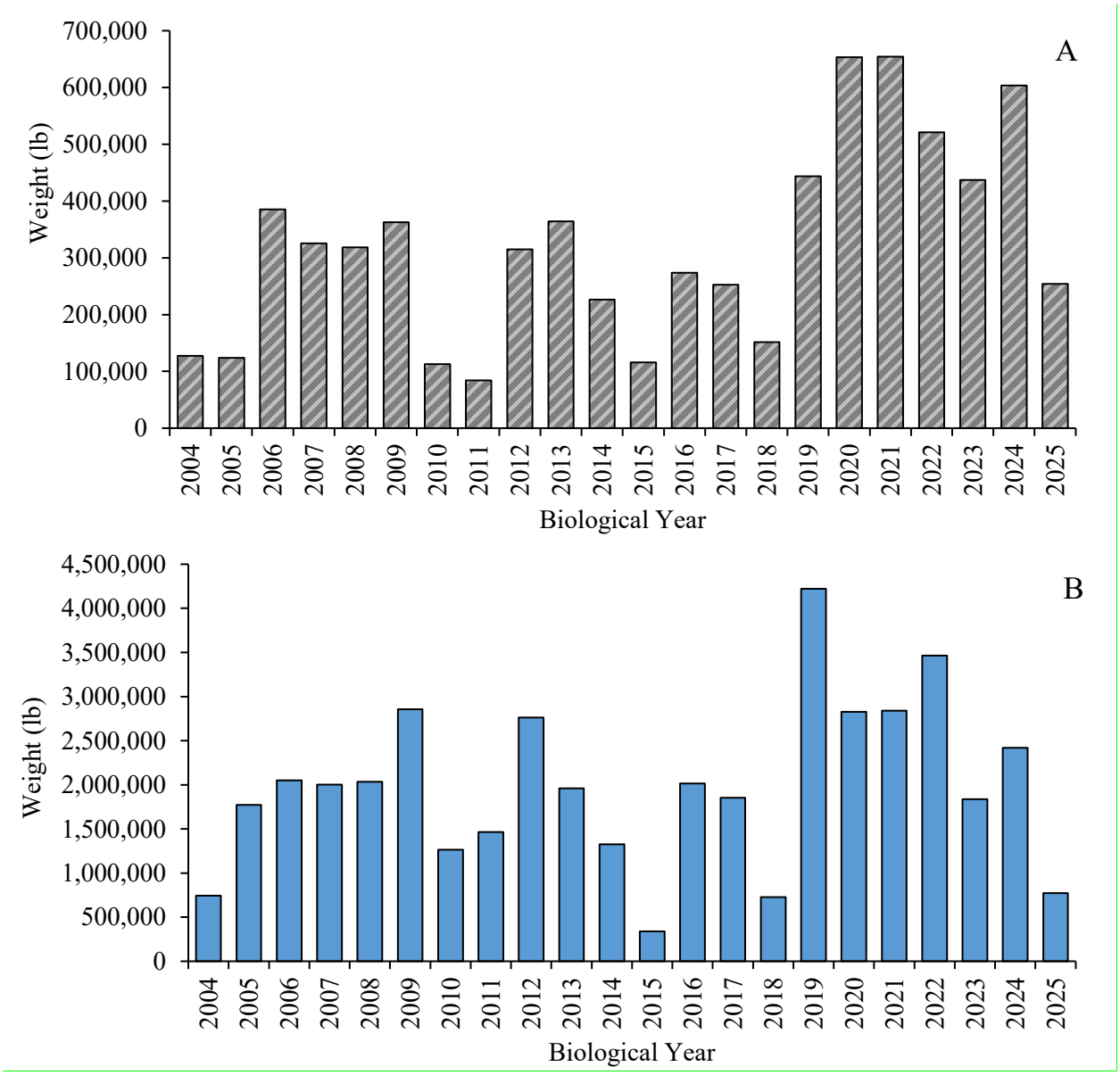


Figure 3. Commercial landings reported through the North Carolina Trip Ticket Program (A) and recreational landings (Type A + B1) estimated from the Marine Recreational Information Program survey (B) of Spotted Seatrout from North Carolina, Biological Year 2004–2025. Biological Year is from March through February of the following year (e.g., Biological Year 2022 starts March 2022 and ends February 2023). Data from the January and February portion of biological year 2026 is preliminary

**Recreational Fishery**

Recreational landings of Spotted Seatrout are estimated from the Marine Recreational Information Program (MRIP). Recreational estimates across all years have been updated and are now based on the MRIP's new Fishing Effort Survey-based calibrated estimates. For more information on MRIP see https://www.fisheries.noaa.gov/topic/recreational-fishing-data.

Recreational harvest of Spotted Seatrout estimated by MRIP (Type A + B1) in biological year 2025 was 453,866 fish corresponding to 773,427 lb (Table 1; Figure 3). While 2025 recreational landings represent a

large decrease compared to recent years, the DMF Director issued Proclamation FF-15-2025 on January 22, 2025, to close harvest of Spotted Seatrout due to a significant cold stun. Harvest did not reopen until July 1, 2025, meaning Spotted Seatrout harvest was closed for the first 4 months of biological year 2025 (March–June). Even after the fishery reopened in July, recreational harvest remained lower than usual into the fall potentially due to fewer legal sized fish available to harvest (Pensinger et al. 2026). Estimated recreational releases in biological year 2025 (5,030,595) were similar to releases in the more recent time period (Table 1) which could support the idea of fewer legal sized Spotted Seatrout available for harvest.

The North Carolina Saltwater Fishing Tournament recognizes anglers for landing and/or releasing fish of exceptional size by issuing citations that document the capture for the angler. Citations awarded through the North Carolina Saltwater Fishing Tournament for Spotted Seatrout have varied annually throughout the time series with a generally increasing trend since 2012 and an annual average of 508 citations since 2004 (Figure 4). Calendar year 2025 (976 citations) a decrease in total citations and harvest citations compared to the previous 3 years. In 2008, North Carolina began awarding release citations for Spotted Seatrout over 24-in. The number of release citations awarded has increased since they began in 2008. Release citations in calendar year 2025 (872 release citations) were the highest awarded and represent the seventh year in a row of a new release citation high.  Spotted Seatrout release citations were 89% compared to total citations awarded; he time-series high and the second year of more release than harvest citations (Figure 4). While the number of Spotted Seatrout release citations in 2025 is in line with the increasing trend since 2019, the proportion likely reflects the impact of closed Spotted Seatrout harvest for five months due to a significant cold stun. Fewer overall citations in 2025 could indicate fewer larger Spotted Seatrout available in the population because of the January 2025 cold stun (biological year 2024), but DMF can only understand the effects of the cold stuns on the population with a stock assessment.

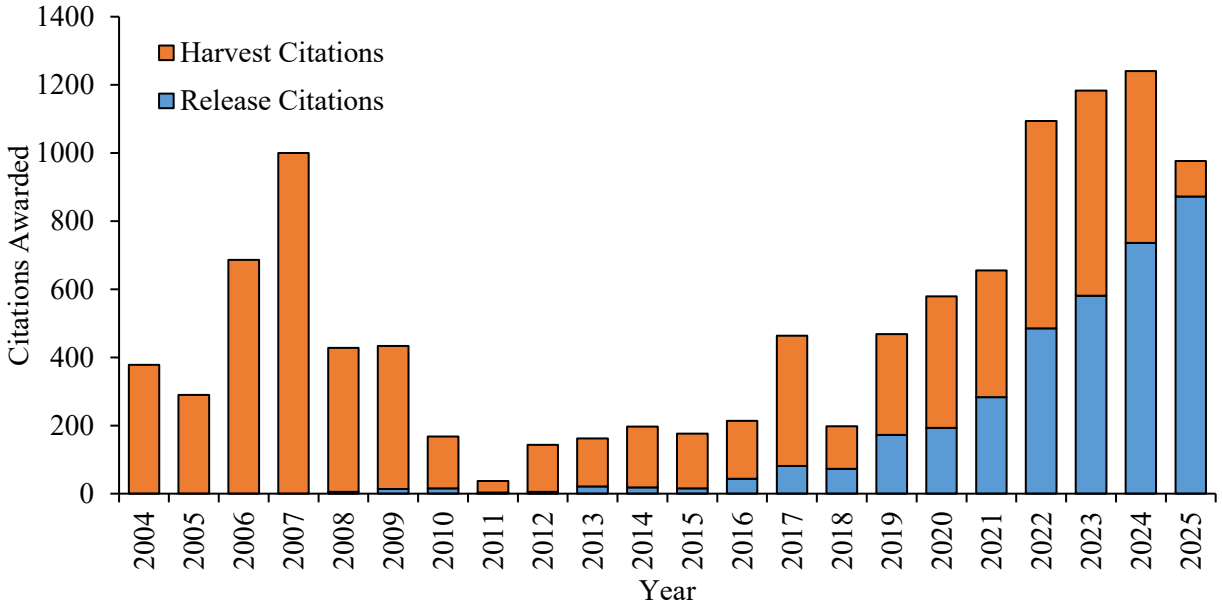


Figure 4. North Carolina Saltwater Fishing Tournament harvest citations and release citations awarded for Spotted Seatrout, calendar years 2004–2025. Citations are awarded for Spotted Seatrout >24-in TL for release or >5 lb landed. Release citations began in 2008.

## MONITORING PROGRAM DATA

### Fishery-Dependent Monitoring

Commercial fish houses are sampled monthly to provide length, weight, and age data from a multitude of species. This information is used to characterize the commercial fishery for stock assessments and to

monitor trends in the size and age of fish being removed from the stock. The average sizes of Spotted Seatrout landed by the commercial fishery are typically larger than the recreational fishery and is primarily driven by the larger maximum size observed in the commercial landings (Table 3; Figure 5). Undersized Spotted Seatrout represent a small portion of the harvest in both sectors; 1.2% of commercial harvest and 0.3% of recreational harvest was below the 14-in size limit in 2025 (Figure 5).

Table 3. Mean, minimum, and maximum lengths (fork length (FL), in) of Spotted Seatrout measured from the commercial and recreational fisheries from the DMF commercial sampling and Marine Recreational Information Program, calendar years 1991–2025.

| Year | Commercial | | | | Recreational | | | |
|---|---|---|---|---|---|---|---|---|
| | Mean Length | Minimum Length | Maximum Length | Total Number Measured | Mean Length | Minimum Length | Maximum Length | Total Number Measured |
| 1991 | 14.4 | 7.7 | 28.7 | 1465 | 15.1 | 4.9 | 31.9 | 745 |
| 1992 | 16.0 | 8.4 | 27.9 | 2468 | 15.6 | 5.1 | 24.2 | 543 |
| 1993 | 16.3 | 8.5 | 29.7 | 2264 | 15.7 | 9.3 | 25.0 | 485 |
| 1994 | 15.6 | 7.0 | 29.1 | 1442 | 16.0 | 10.6 | 24.0 | 1,076 |
| 1995 | 17.1 | 8.5 | 29.1 | 2944 | 15.6 | 8.5 | 31.6 | 853 |
| 1996 | 16.0 | 7.0 | 27.6 | 1159 | 14.6 | 8.9 | 24.3 | 307 |
| 1997 | 14.9 | 8.1 | 29.9 | 4268 | 15.3 | 8.9 | 23.1 | 622 |
| 1998 | 14.5 | 8.0 | 29.9 | 4696 | 16.4 | 11.0 | 36.5 | 551 |
| 1999 | 15.6 | 7.6 | 30.2 | 6,152 | 16.4 | 11.6 | 26.8 | 699 |
| 2000 | 17.5 | 6.0 | 30.7 | 2,899 | 15.6 | 11.3 | 25.2 | 330 |
| 2001 | 16.3 | 7.6 | 30.7 | 1,548 | 14.8 | 11.5 | 26.0 | 326 |
| 2002 | 16.1 | 8.0 | 28.9 | 3,822 | 14.9 | 11.8 | 24.8 | 283 |
| 2003 | 17.2 | 9.5 | 29.6 | 2,205 | 14.6 | 9.9 | 25.0 | 130 |
| 2004 | 16.6 | 9.0 | 27.9 | 2,557 | 15.3 | 8.9 | 22.5 | 294 |
| 2005 | 16.8 | 8.5 | 27.5 | 2,283 | 14.2 | 8.7 | 25.2 | 664 |
| 2006 | 16.3 | 8.9 | 29.3 | 6,155 | 15.5 | 10.1 | 25.9 | 706 |
| 2007 | 17.3 | 9.6 | 31.0 | 8,315 | 15.9 | 10.8 | 27.7 | 521 |
| 2008 | 17.0 | 7.3 | 30.3 | 5,645 | 15.6 | 11.5 | 26.5 | 790 |
| 2009 | 16.7 | 5.4 | 29.5 | 6,268 | 16.0 | 9.1 | 26.0 | 779 |
| 2010 | 17.5 | 11.4 | 30.9 | 3,730 | 17.5 | 12.4 | 24.8 | 336 |
| 2011 | 16.6 | 8.8 | 27.8 | 1,085 | 17.0 | 12.3 | 24.2 | 638 |
| 2012 | 16.5 | 7.4 | 31.1 | 4,268 | 16.5 | 13.0 | 24.1 | 939 |
| 2013 | 16.7 | 8.7 | 28.5 | 4,736 | 16.8 | 10.1 | 23.5 | 865 |
| 2014 | 17.3 | 5.5 | 28.3 | 2,877 | 17.6 | 13.1 | 26.0 | 381 |
| 2015 | 18.3 | 8.9 | 30.9 | 1,824 | 16.9 | 12.8 | 25.0 | 154 |
| 2016 | 17.3 | 9.4 | 31.7 | 2,623 | 16.8 | 13.0 | 25.2 | 647 |
| 2017 | 17.6 | 7.6 | 32.9 | 2,289 | 17.0 | 11.6 | 25.8 | 864 |
| 2018 | 17.2 | 10.5 | 28.0 | 805 | 15.7 | 9.3 | 23.3 | 274 |
| 2019 | 17.3 | 10.1 | 28.9 | 2,587 | 16.7 | 10.7 | 24.6 | 1,574 |
| 2020 | 17.5 | 10.9 | 33.4 | 2,861 | 17.0 | 12.1 | 26.8 | 1,119 |
| 2021 | 17.5 | 10.9 | 29.9 | 3,432 | 17.0 | 11.1 | 26.5 | 1,019 |
| 2022 | 17.9 | 13.2 | 28.3 | 3,316 | 17.4 | 12.6 | 28.0 | 632 |
| 2023 | 17.4 | 8.7 | 27.9 | 2,586 | 17.3 | 12.6 | 25.9 | 516 |
| 2024 | 18.1 | 10.8 | 29.4 | 2,790 | 17.1 | 12.0 | 26.5 | 575 |
| 2025 | 17.9 | 11.5 | 27.5 | 554 | 16.9 | 13.8 | 24.1 | 138 |

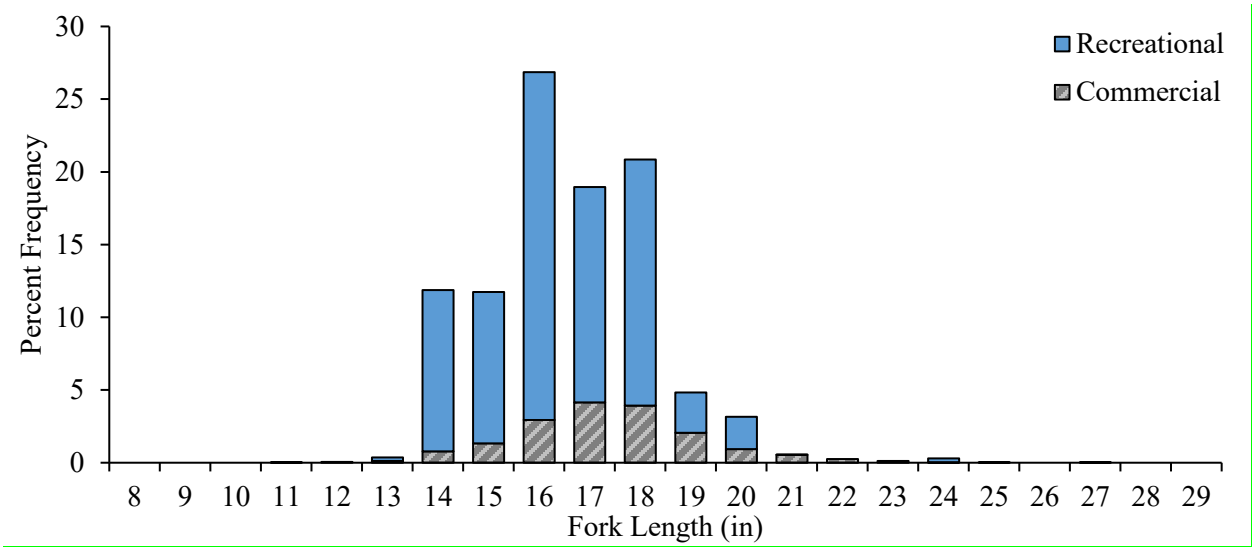


Figure 5. Commercial and recreational length frequency distribution from Spotted Seatrout harvested in biological year 2025 from DMF commercial sampling and the Marine Recreational Information Program in North Carolina.

The number of fish sampled by division staff at commercial fish houses has varied over time due to annual variability in landings of the fishery. The mean length of Spotted Seatrout in 2025 (17.9 in FL) similar to the mean length in 2024 (18.1 in FL; Table 1). Minimum length (11.5 in FL) was higher than the minimum length in 2024 (10.8 in FL) and similar to recent years (Table 3; Figure 6). Maximum length in 2024 decreased to 27.5 in FL and was only the second time maximum length was below 28 in FL since 2012 (2023, 27.9 in FL). Most Spotted Seatrout landings by the commercial fishery in 2025 came from the run around and anchored gill net fisheries (67% and 21% respectively) with drift nets (6%), and all other gears (6%; mainly pound nets and gigs) accounting for the rest.

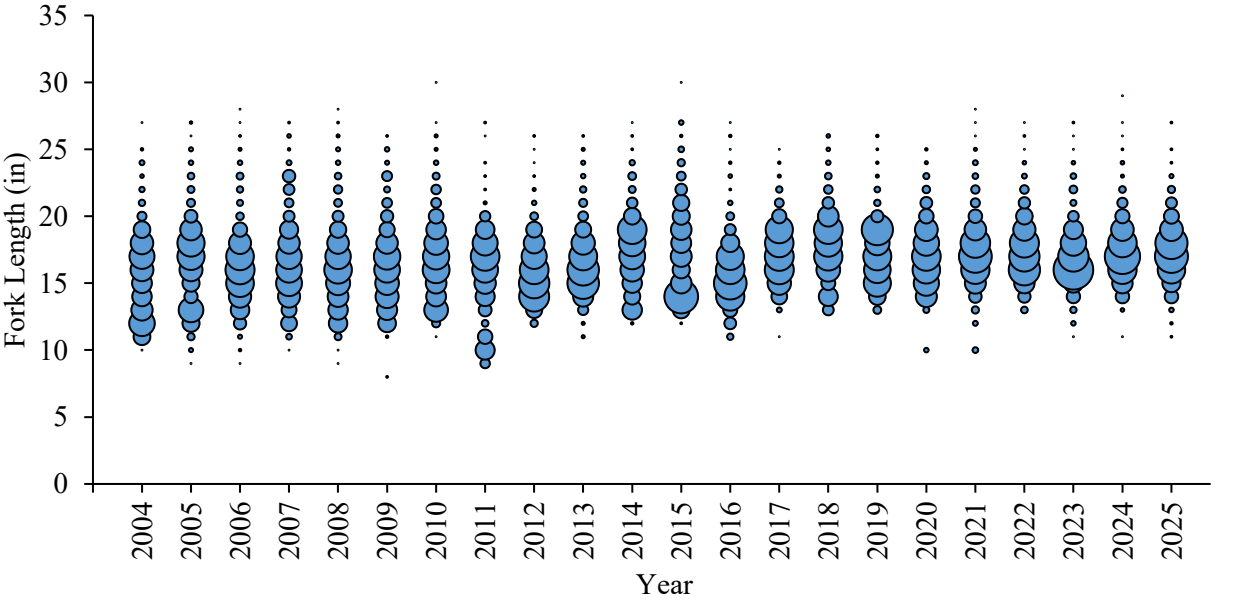


Figure 6. Commercial length frequency from DMF commercial sampling of Spotted Seatrout harvested biological year 2004–2025. Bubbles represent fish at length and the bubble size is proportional to the number of fish at that length.

Recreational catch is almost exclusively hook-and-line. The mean length from the recreational fishery (16.9 in FL) in 2025 was similar to the previous 4 years, while minimum length (13.8 in FL) was the largest in the timeseries (1991–2025) and maximum length (24.1 in FL) was much smaller than the maximum length in recent years (Table 3). While the decrease in maximum size of Spotted Seatrout in the recreational fishery in 2025 could be, in part, a result of the significant cold stun in January 2025 adversely affecting larger fish, it is likely the recreational slot limit implemented when the fishery reopened in July 2025 had a larger impact on the maximum size of Spotted Seatrout harvested in the recreational fishery. Additionally, the Spotted Seatrout harvest closure also impacted the number of fish harvested and the number of fish measured in 2025. Over 99% of the Spotted Seatrout sampled from the recreational fishery in 2025 were between 14 and 20 in (Figure 5 and Figure 7).

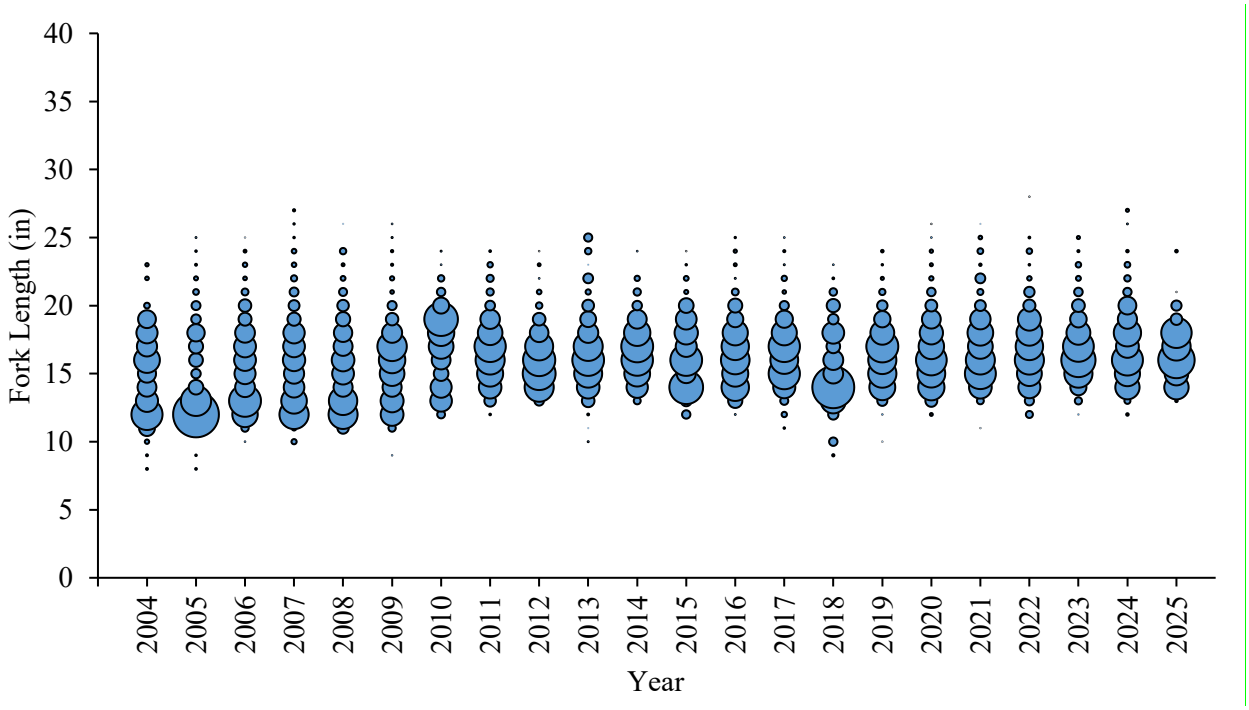


Figure 7. Recreational length frequency of Spotted Seatrout harvested from the Marine Recreational Information Program in North Carolina, biological year 2004–2025. Bubbles represent fish at length and the bubble size is proportional to the number of fish at that length.

**Fishery-Independent Monitoring**

The DMF utilizes multiple fishery independent monitoring programs to provide biological data on Spotted Seatrout. Indices of juvenile (Program 120) and adult (Program 915) relative abundance have been included in stock assessments. Additionally, both programs are used to help assess population level effects of cold stuns.

Program 120, the North Carolina Estuarine Trawl Survey, is a fishery independent multispecies monitoring program that has been ongoing since 1971 in the months of May and June. One of the key objectives of this program is to provide a long-term database of annual juvenile recruitment for economically important species. This survey samples a fixed set of 104 core stations with additional stations as needed. The core stations are sampled from western Albemarle Sound south to the South Carolina border each year without deviation two times in the months of May and June. An additional set of 27 Spotted Seatrout juvenile stations in Pamlico Sound and its major tributaries were added in 2004 and are sampled during the months of June and July. Data from the Spotted Seatrout specific stations are used to generate an index of relative abundance of age-0 Spotted Seatrout, calculated as the average number of fish per tow. The resulting

relative abundance index for the time series is variable with no significant trend overall, and variable highs across multiple years (2006, 2008, 2012, 2013, 2018, and 2024) suggesting relatively higher recruitment in those years (Figure 8). The Program 120 relative abundance index in 2025 was 0.76 Spotted Seatrout per tow, which was a decrease from the 2024 value (2.56 Spotted Seatrout per tow) and was less than the time series mean (1.84 Spotted Seatrout per tow).

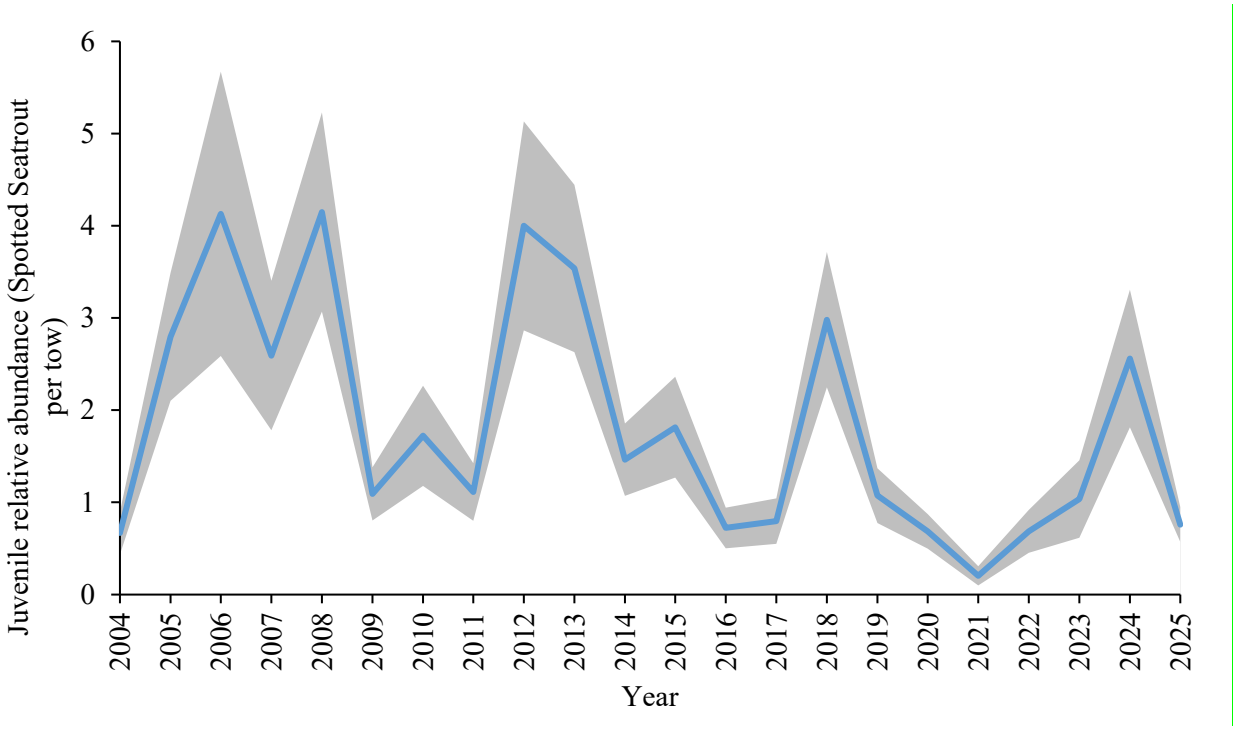


Figure 8. Relative abundance index of Spotted Seatrout from the North Carolina Estuarine Trawl Survey (Program 120) during June and July, 2004–2025. Error bars represent ±1 SE.

The DMF Fishery-Independent Gill Net Survey (Program 915) began in 2001 and included sampling in the Pamlico Sound along the Hyde and Dare counties shorelines. In July 2003, sampling was expanded to include the Neuse, Pamlico, and Pungo rivers. Additional areas in the Southern District including the New and Cape Fear rivers (2008) and the White Oak River, the Newport River, Core Sound, and Bogue Sound (2018) were added in 2008 and 2018 respectively. A stratified random sampling design is used based on area and water depth. Sampling occurs from mid-February to mid-December using an array of gill nets with stretched mesh sizes ranging from 3.0 to 6.5 in. Program 915 is the division's longest-running independent sampling program that consistently catches adult Spotted Seatrout. Furthermore, Program 915 was the only fishery independent sampling program included in the 2022 Spotted Seatrout Stock Assessment. In the 2022 Spotted Seatrout Stock Assessment, the northern stations (i.e., the Pamlico Sound and Central River stations) were combined then separated into spring (April–June) and fall (September–November) indices of abundance (NCDMF 2022b). During 2020 no indices of abundance are available for Spotted Seatrout from the fishery-independent assessment (Program 915). Sampling in this program was suspended in February 2020 due to COVID-19 restrictions and protected species interactions but resumed July 2021. Relative abundance in the Fall Index has been relatively consistent since 2006 with some variation around the time series mean (1.00 Spotted Seatrout per set) with a large spike in relative abundance in 2019 (2.10 Spotted Seatrout per set). Fall relative abundance in 2025 (1.58 Spotted Seatrout per set) decreased compared to 2024 relative abundance (2.20 Spotted Seatrout per set); however, 2024 relative fall relative abundance was the highest in the time series (Figure 9). The Spring Index has been more variable throughout the time series. However, 2019 also represented a time series high in relative abundance (1.50 Spotted Seatrout per set; Figure 10). Sampling in Program 915 did not resume until July of 2021, therefore

there is no Spring Index in 2021. Relative abundance in 2025 (1.30 Spotted Seatrout per set) was similar to relative abundance in 2024 (1.33 Spotted Seatrout per set) and remained well above the mean relative abundance value in the time series (0.66 Spotted Seatrout per set).

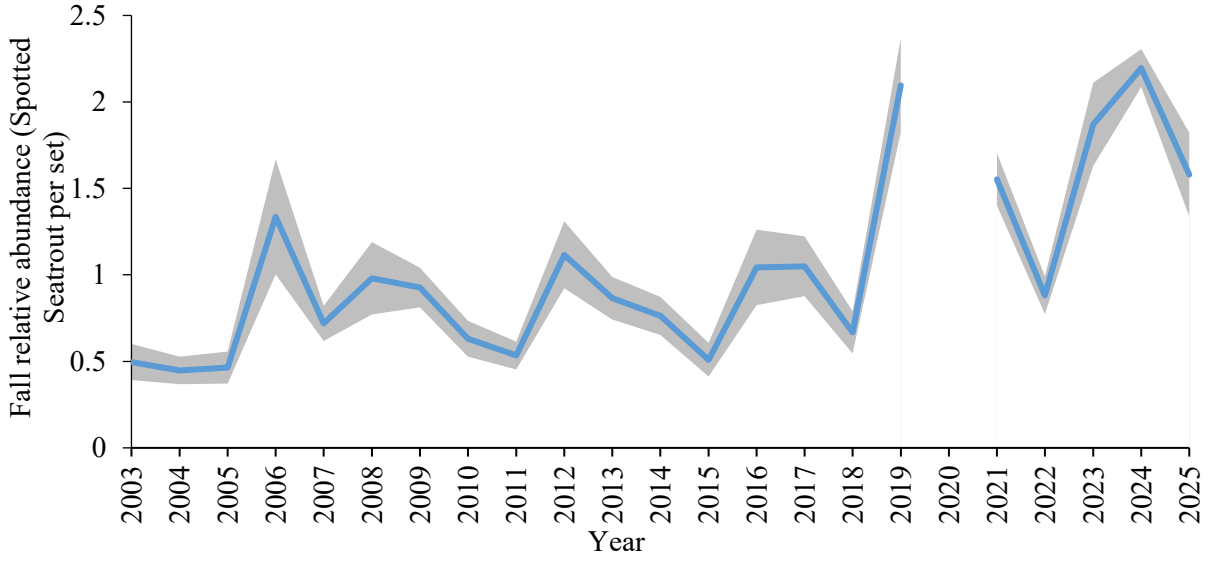


Figure 9. Fall relative abundance index of Spotted Seatrout collected from DMF Fishery-Independent Gill Net Survey in Pamlico Sound, Pamlico River, Pungo River, and Neuse River during September, October, and November 2003–2025. Error bars represent ±1 SE. Sampling not conducted in 2020 for the Fall Index.

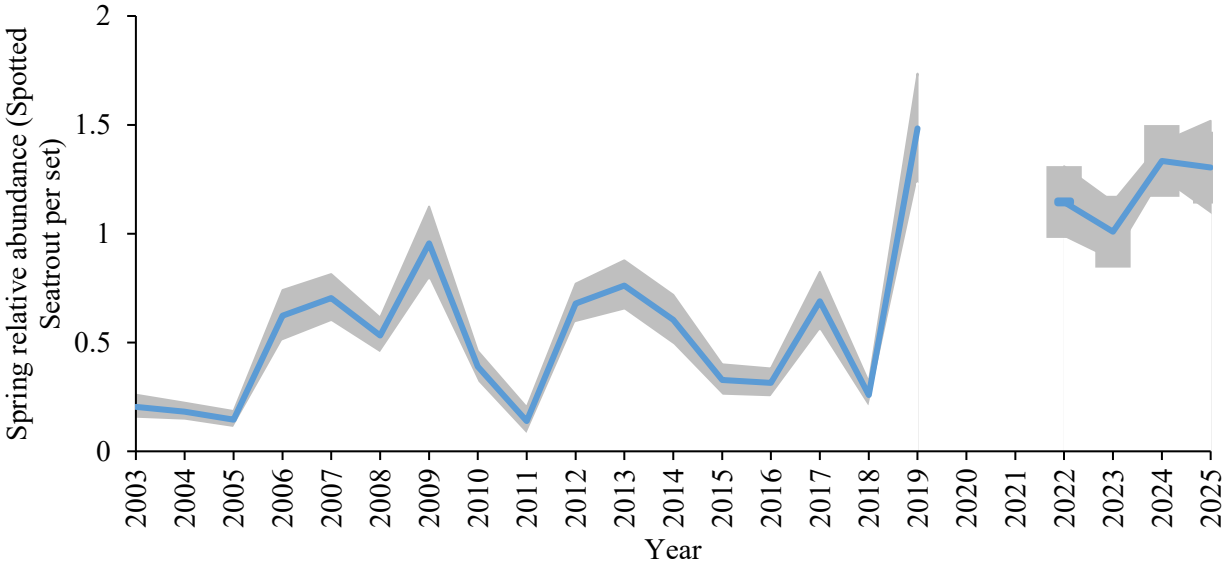


Figure 10. Spring relative abundance index of Spotted Seatrout collected from DMF Fishery-Independent Gill Net Survey in Pamlico Sound, Pamlico River, Pungo River, and Neuse River during April, May, and June 2003–2025. Error bars represent ±1 SE. Sampling not conducted in 2020 or April, May, and June of 2021.

Spotted Seatrout age samples are collected from numerous DMF fishery independent and dependent sources. To date, a total of 24,669 otoliths from Spotted Seatrout have been aged since 1991 (Table 4). Except for 2003, the minimum age of sampled Spotted Seatrout has been age 0 for every year DMF has

recorded this information. Maximum ages have varied every year, ranging from age 5 to 9. Modal ages give an indication of the age of the largest age cohort in the fishery and averages just over age-1 meaning 1 year old Spotted Seatrout are consistently the largest age cohort. Spotted Seatrout length-at-age was summarized based on all available age data (1991–2025; Figure 11). Spotted Seatrout grow quickly until around age 4 when growth rates generally slow. In 2025, the number of Spotted Seatrout aged ($N$ = 880) decreased from the previous year ($N$ = 1,352). Spotted Seatrout sampled in 2025 had a modal age of 1 and maximum age of 7.

Table 4. Modal age, minimum age, maximum age, and number aged for Spotted Seatrout collected through DMF sampling programs, calendar years 1991–2025.

| Year | Modal Age | Minimum Age | Maximum Age | Total Number Aged |
|---|---|---|---|---|
| 1991 | 1 | 0 | 7 | 679 |
| 1992 | 1 | 0 | 6 | 572 |
| 1993 | 1 | 0 | 6 | 645 |
| 1994 | 1 | 0 | 9 | 688 |
| 1995 | 1 | 0 | 5 | 623 |
| 1996 | 1 | 0 | 6 | 734 |
| 1997 | 1 | 0 | 6 | 710 |
| 1998 | 1 | 0 | 9 | 765 |
| 1999 | 1 | 0 | 6 | 869 |
| 2000 | 1 | 0 | 7 | 566 |
| 2001 | 1 | 0 | 5 | 425 |
| 2002 | 1 | 0 | 7 | 713 |
| 2003 | 1 | 1 | 7 | 405 |
| 2004 | 1 | 0 | 6 | 598 |
| 2005 | 1 | 0 | 5 | 727 |
| 2006 | 1 | 0 | 8 | 970 |
| 2007 | 2 | 0 | 8 | 702 |
| 2008 | 1 | 0 | 7 | 616 |
| 2009 | 2 | 0 | 6 | 661 |
| 2010 | 1 | 0 | 6 | 623 |
| 2011 | 1 | 0 | 6 | 421 |
| 2012 | 1 | 0 | 5 | 593 |
| 2013 | 2 | 0 | 5 | 635 |
| 2014 | 1 | 0 | 7 | 530 |
| 2015 | 2 | 0 | 5 | 448 |
| 2016 | 1 | 0 | 5 | 456 |
| 2017 | 1 | 0 | 7 | 881 |
| 2018 | 1 | 0 | 5 | 516 |
| 2019 | 1 | 0 | 8 | 1,173 |
| 2020 | 2 | 0 | 5 | 634 |
| 2021 | 1 | 0 | 6 | 1,002 |
| 2022 | 2 | 0 | 6 | 812 |
| 2023 | 1 | 0 | 8 | 1,045 |
| 2024 | 2 | 0 | 7 | 1,352 |
| 2025 | 1 | 0 | 7 | 880 |

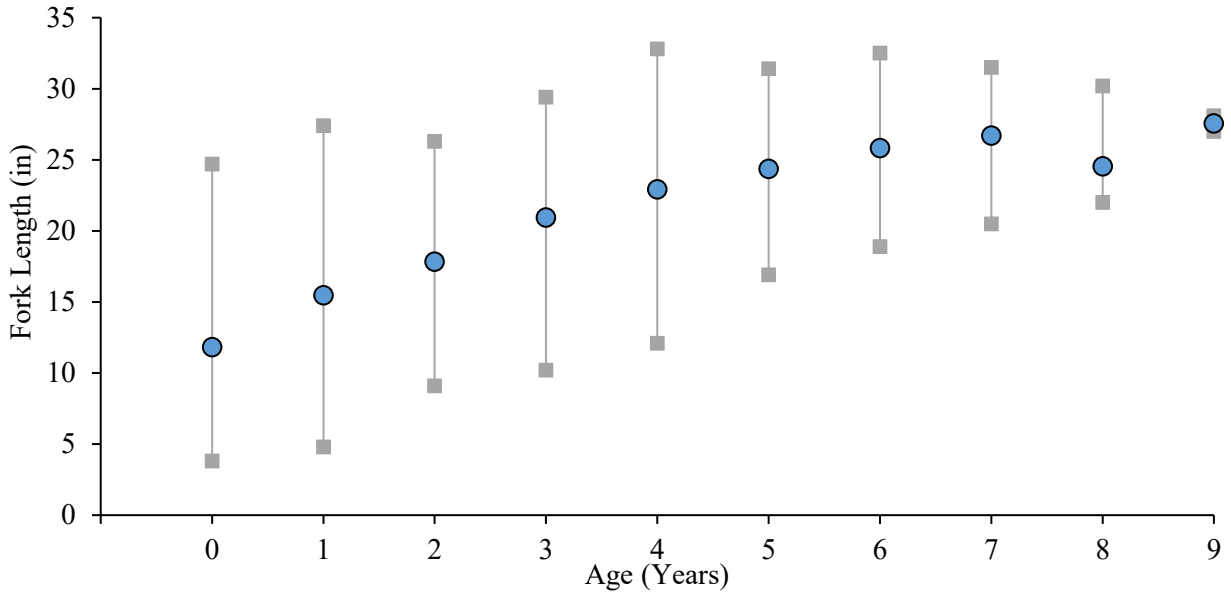


Figure 11. Spotted Seatrout length at age based on all age samples collected from DMF sampling programs, calendar year 1991 to 2025. Blue circles represent the mean size at a given age while the grey squares represent the minimum and maximum observed size for each age.

**Tagging**

DMF established the Multi-Species Tagging Program in 2014 designed to collect data on habitat use, migration patterns, population structure, and morality rates of Cobia, Red Drum, Southern Flounder, Spotted Seatrout, and Striped Bass. Specifically, Spotted Seatrout are tagged with single yellow tags (low reward), single red tags (high reward), or double yellow tags. Since 2014, Division staff and Division trained volunteer taggers have tagged 14,751 Spotted Seatrout with 956 recaptures reported (Figure 12, Table 5). In 2025 specifically, Division staff and volunteers tagged 630 Spotted Seatrout with 41 reported recaptures (Figure 13).

Table 5. Total tagged, total recaptured, average days at large, maximum days at large, average distance traveled (mi), and maximum distance traveled (mi) for Spotted Seatrout tagged in the DMF Multi-Species Tagging Program from calendar year 2014-2025.

| Year Tagged | Total Tagged | Total Recaptured | Average Days at Large | Maximum Days at Large | Average Distance Traveled | Maximum Distance Traveled |
|---|---|---|---|---|---|---|
| 2014 | 629 | 28 | 88 | 431 | 38 | 271 |
| 2015 | 1,043 | 33 | 148 | 641 | 18 | 94 |
| 2016 | 1,294 | 67 | 131 | 567 | 24 | 207 |
| 2017 | 2,567 | 155 | 117 | 1099 | 28 | 208 |
| 2018 | 1,459 | 49 | 201 | 904 | 58 | 202 |
| 2019 | 2,603 | 174 | 170 | 1091 | 36 | 223 |
| 2020 | 1,383 | 198 | 155 | 884 | 37 | 298 |
| 2021 | 526 | 51 | 150 | 777 | 32 | 151 |
| 2022 | 816 | 47 | 167 | 774 | 34 | 117 |
| 2023 | 787 | 52 | 179 | 1,003 | 33 | 231 |
| 2024 | 1,014 | 61 | 145 | 528 | 21 | 249 |
| 2025 | 802 | 24 | 75 | 268 | 26 | 144 |

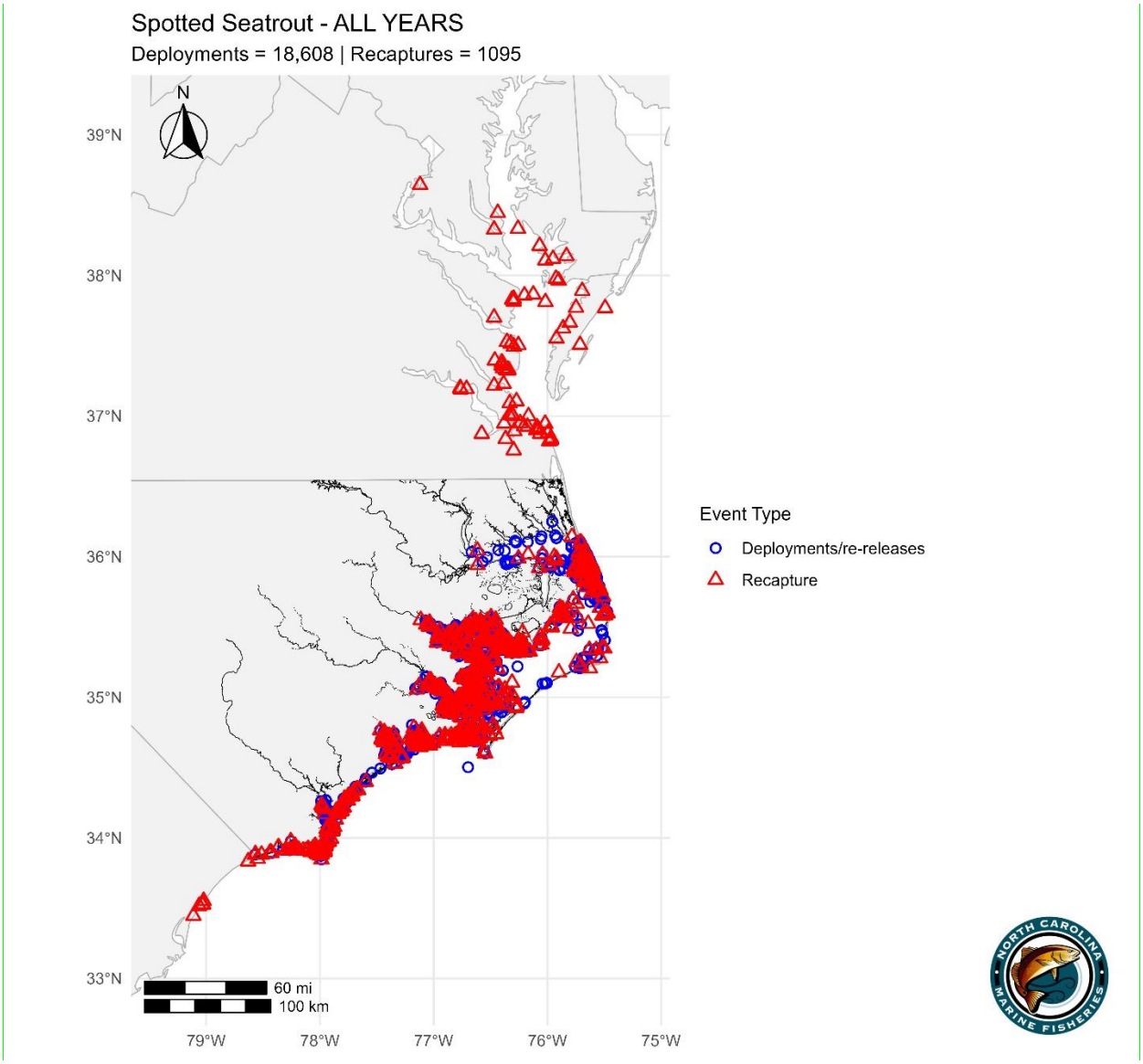


Figure 12. Spotted Seatrout release (blue circles) and recapture (red triangles) locations for Spotted Seatrout tagged in the DMF Multi-Species Tagging Program from calendar year 2014–2025.

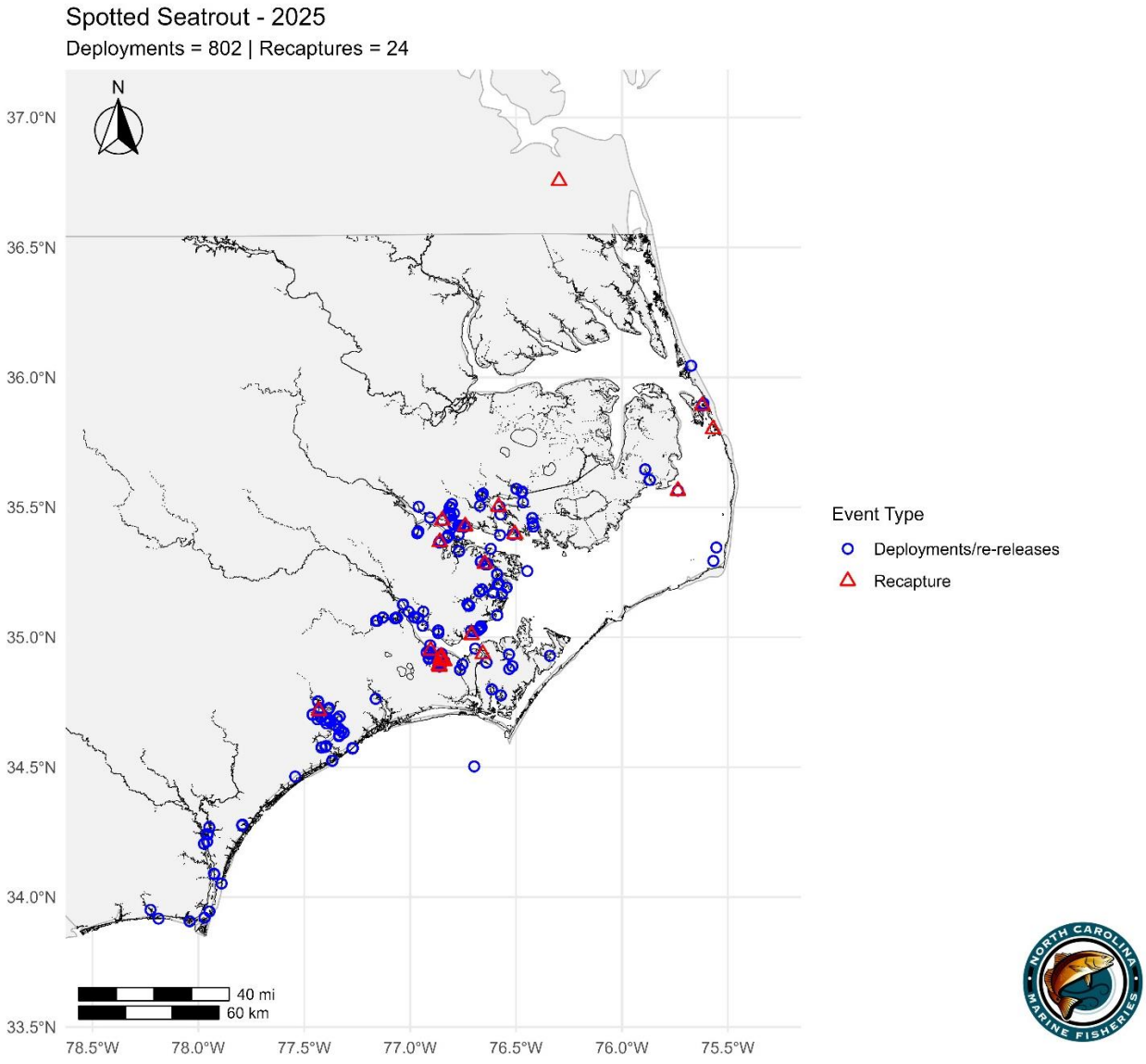


Figure 13. Spotted Seatrout release (blue circles) and recapture (red triangles) locations for Spotted Seatrout tagged in the DMF Multi-Species Tagging Program from calendar year 2025.

## RESEARCH NEEDS

The following research needs were compiled from the original Spotted Seatrout FMP, the 2022 North Carolina Spotted Seatrout Stock Assessment Report, and Amendment 1 to the Spotted Seatrout FMP. Improved management of Spotted Seatrout is dependent upon research needs being met. Research needs are not listed in order of priority.

- Develop a juvenile abundance index to gain a better understanding of a stock recruitment relationship. — Ongoing, using Program 120 since 2004; CRFL grant 2F40 is investigating an optimal sampling design for P120; exploratory seine sampling started in 2024 and will continue in 2026
- Research the feasibility of including measures of temperature or salinity into the stock recruitment relationship. — Not Completed
- Incorporate cold stun event information into the modeling of the population. — Unsuccessfully attempted using stock synthesis model from the 2012 stock assessment, unsuccessfully attempted to directly incorporate cold stun event information into 2022 benchmark assessment but assessment was able to capture the signal of cold stun events, is being investigated further during Johnna Brooks PhD project
- Estimate or develop a model to predict the impact of cold stun events on local and statewide Spotted Seatrout abundance. — Ongoing. Unsuccessfully attempted using stock synthesis model from the 2012 stock assessment, 2022 benchmark assessment was able to capture the signal of cold stun events but not predict the impact, Johnna Brooks PhD project developed model that could correlate the number of cold days in a winter to Spotted Seatrout spring abundance.
- Investigate the distribution of Spotted Seatrout in nursery and non-nursery areas. — Not Completed

## MANAGEMENT

The DMF management strategy is to maintain a spawning potential ratio of at least 20% to reduce fishing mortality (*F*) and increase the likelihood of sustainability (see Table 6 for management details). This strategy should provide a greater cushion for the population and likely lead to faster recovery of the population after cold stun events, which can lead to mass mortalities in the winter months potentially affecting the number of mature fish available to spawn the following spring. The Director maintains authority to intervene in the event of a significant cold stun event and close the fishery statewide through June 30. This reduces fishing mortality on Spotted Seatrout until after the peak in their spawning season.

Table 6. Summary of the MFC management strategies and their implementation status for the 2025 Amendment 1 to the N.C. Spotted Seatrout FMP.

| Management Strategy | Implementation Status |
|---|---|
| Recreational management: 19.9–39.9% reduction in harvest needed, 14-in to 20-in recreational slot limit with allowance for one fish >26-in, 3-fish bag limit | Accomplished; Proclamation authority |
| Commercial management: 19.9–39.9% reduction in harvest needed, harvest closed Sat–Sun Jan–Sep and Sat–Mon Oct–Dec, 75-fish trip limit and 14-in minimum size limit maintained | Accomplished; Proclamation authority |
| Adopt an adaptive management framework to allow for management adjustments between FMP updates to ensure sustainable harvest | Accomplished |
| Cold Stun Management: Extend season closure in event of severe cold stun through Jun 30, adopt an adaptive management framework | Accomplished |

| Management Strategy | Implementation Status |
|---|---|
| to allow for additional management measures to speed stock recover in event of especially severe cold stun | |
| Management carried forward from Supplement A: it is unlawful to set gill nets in Join Fishing Waters from 12:01 a.m. on Saturday to 12:01 a.m. on Mon except in Albemarle and Currituck sounds. It is unlawful for a commercial fishing operation to possess more than the recreational bag limit of Spotted Seatrout per person per day taken by hook and line. It is unlawful to take more than the recreational bag limit of Spotted Seatrout per person per day for recreational purposes. Seventy-five fish commercial trip limit (excluding the Bogue Banks stop net fishery in the Atlantic Ocean and Spotted Seatrout taken commercially by hook-and-line). | Accomplished |

## MANAGEMENT PERFORMANCE AND FISHERY MANAGEMENT PLAN SCHEDULE RECOMMENDATIONS

Amendment 1 to the N.C. Spotted Seatrout Fishery Management Plan was adopted by the MFC in March 2025. A benchmark stock assessment was completed in October 2022, incorporating data through February 2020. Despite continued elevated levels of harvest from 2019 through 2024 and a significant cold stun event in 2025, Spotted Seatrout relative abundance remains higher than the timeseries average in the 2025 spring and fall indices. This is likely due to a combination of high Spotted Seatrout abundance prior to the 2025 cold stun event, management implemented in Amendment 1 to the Spotted Seatrout FMP, population resilience due to Spotted Seatrout life history traits, and the Division's response to cold stun events (closing harvest through June 30). Spotted Seatrout harvest in biological year 2025 was well below the harvest reduction goals outlined in Amendment 1; however, Amendment 1 management measures did not go into effect until July 1, 2025, when Spotted Seatrout harvest reopened following the cold stun closure. It is not possible to tease apart the effect of the cold stun closure and the effect of new management measures on Spotted Seatrout harvest in biological year 2025. Additionally, a second cold stun event occurred in 2026 and it is unclear the effect back-to-back significant cold stuns will have on the Spotted Seatrout stock. No change to the current schedule for review of the Spotted Seatrout FMP is recommended, but division staff will analyze data following the 2026 cold stun as it becomes available. The next comprehensive review of the Spotted Seatrout FMP is scheduled to occur in 2030 and a schedule change is not recommended.

## LITERATURE CITED

ASMFC (Atlantic States Marine Fisheries Commission). 1990. Proceedings of the Atlantic States Marine Fisheries Commission 49th annual meeting—Interstate Fisheries Management Plan Policy Board meeting. ASMFC, Washington, District of Columbia. 15 pp.

ASMFC. 2011. Omnibus Amendment to the Interstate Fishery Management Plans for Spanish Mackerel, Spot, and Spotted Seatrout. Fisheries Management Report. Atlantic States Marine Fisheries Commission. Washington, District of Columbia. 143 pp.

Burns, B. 1996. Life history and population dynamics of Spotted Seatrout (*Cynoscion nebulosus*) in North Carolina. Life History of Selected Marine Recreational Fishes in

Ellis, T.A., H.L. Brightman, S. Musick, J.A. Buckel, J.R. McDowell. 2019. Stock structure of Spotted Seatrout: assessing genetic connectivity at northern latitudinal limits. Coastal Recreational Fishing License Final Performance Report, Morehead City, NC 42pp.

Lowerre-Barbieri, S.K., N. Henderson, J. Llopiz, S. Walters, J. Bickford, and R. Muller. 2009. Defining a spawning population (Spotted Seatrout *Cynoscion nebulosus*) over temporal, spatial, and demographic scales. Mar Ecol Prog Ser. 394: 231-245.

Luczkovich, J.J., R.C. Pullinger, S.E. Johnson and M.W. Sprague. 1999. Identifying the critical spawning habitats of sciaenids using passive acoustics. Transactions of the American Fisheries Society, 137: 576–605.

Murphy, M.D., C.B. Guenther, and B. Mahmoudi. 2006. An assessment of the status of Spotted Seatrout in Florida waters through 2005. Florida Fish and Wildlife Conservation Commission. Fish and Wildlife Research Institute St. Petersburg, FL.

Murphy, M.D., D. Chagaris, and D. Addis. 2011. An assessment of the status of Spotted Seatrout in Florida waters through 2009. Florida Fish and Wildlife Conservation Commission Fish and Wildlife Research Institute In-House Report 2011.

NCDMF (North Carolina Division of Marine Fisheries). 2012. North Carolina Spotted Seatrout Fishery Management Plan. North Carolina Department of Environment and Natural Resources. North Carolina Division of Marine Fisheries, Morehead City, North Carolina. 344 pp.

NCDMF. 2014. Supplement A to the North Carolina Spotted Seatrout Fishery Management Plan. North Carolina Department of Environment and Natural Resources. North Carolina Division of Marine Fisheries. Morehead City, North Carolina. 9 pp.

NCDMF. 2015. Stock Assessment of Spotted Seatrout, *Cynoscion nebulosus*, in Virginia and North Carolina Waters. North Carolina Department of Environment and Natural Resources. North Carolina Division of Marine Fisheries. Morehead City, North Carolina. 142 pp.

NCDMF. 2022a. North Carolina Fishery Management Plan for Interjurisdictional Fisheries, 2022 Information Update. North Carolina Division of Marine Fisheries, Morehead City, North Carolina. 18 pp.

NCDMF (North Carolina Division of Marine Fisheries). 2022b. Stock Assessment of Spotted Seatrout, *Cynoscion nebulosus*, in Virginia and North Carolina Waters, 1991-2019. North Carolina Division of Marine Fisheries, NCDMF SAP-SAR-2-22-02, Morehead City, North Carolina. 137 pp.

NCDMF. 2025. North Carolina Spotted Seatrout Fishery Management Plan, Amendment 1. North Carolina Division of Marine Fisheries, Morehead City, North Carolina. 110 p.

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: 245-259.

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. 20p.

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