Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: **Sciaenids Management Board**

FROM: **Red Drum Technical Committee and Stock Assessment Subcommittee**

DATE: **July 28, 2025**

SUBJECT: **Considerations for New Fishing Mortality Methods Pathway Proposed in Addendum II to Amendment 2 of the Red Drum Interstate Fishery Management Plan**

The Red Drum Technical Committee (TC) met on July 8, 2025 to discuss development of Draft Addendum II to Amendment 2 of the Red Drum Interstate Fishery Management Plan. Staff provided an overview of Plan Development Team progress towards development of the addendum and the remaining timeline. The primary purpose of the call was for the TC to provide guidance to the Sciaenids Management Board (Board) on the addendum component of establishing a pathway to allow states to propose new methods to estimate fishing mortality for the evaluation of future regulation changes states may propose. This call was a continuation of the discussion from an earlier TC call on June 2, 2025, when this component was introduced.

Language provided by Board members following the 2025 Spring Commission Meeting and discussion during the June 2 TC call identified four topics for consideration behind the request for this component of the addendum:

(1) a method used for the latest stockwide assessment becoming obsolete/outdated,
(2) concern that delays to future stockwide assessments with updated information on stock status, could, in turn, delay the re-evaluation of red drum management by the states,
(3) allowing the assessment of sub-stock/localized red drum condition as opposed to stockwide condition, and
(4) using an alternative management quantity (e.g., escapement) for assessing sub-stock/localized condition and informing potential management changes (either more restrictive or liberalized from status quo).

Initial recommendations from the June 2 TC call were reviewed and included:

- **Implement a safeguard like a formal review process to ensure sub-stock/localized fishing mortality information is consistent with the stockwide information**
- **Clearly define the quantity being used as the basis of fishing mortality information (e.g., spawning potential ratio, escapement) and how it is calculated**

Staff noted the Commission does currently have processes in place that can be used as a pathway to propose new methods to estimate fishing mortality as well as to address the topics above that led to

this request. These processes are outlined in the Commission's Technical Support Group Guidance and Benchmark Stock Assessment Process document. The process for proposing new methods to estimate fishing mortality outlined in the document is as follows:

> "An alternative stock assessment for a Commission-managed species developed by external groups must be brought to the attention of the Board/Section Chair during a benchmark stock assessment process if the group would like their assessment to be considered for management use. Alternative assessments are subject to the same standards, documentation, and process as assessments developed by the Commission, including SAS, TC, and independent peer review. External groups must notify the Commission one month in advance of an assessment workshop regarding their interest in presenting an alternative assessment at the workshop. Any analyses submitted outside the benchmark process may not be considered for management until the next Commission benchmark assessment."

An existing process also allows for requests for expedited assessments to prevent delays in updated stock status information:

> "Requests for additional benchmark assessments and associated peer reviews may be made by the Board/Section to the Policy Board and are granted based on prioritization of the existing stock assessment and peer review schedule, relative workloads of assessment scientists, and available funding."

As the proposed process to provide new methods for estimating red drum fishing mortality deviates from that outlined in the guidance document, the TC discussed the following questions during the call to provide considerations to the Board on this component of the addendum:

- What impact(s), if any, would different assessments (e.g., state-specific vs. stockwide) used through time for evaluating management changes and making additional management changes have on future assessments and/or resource stock status?
- What does the Board need to consider if:
    - using assessments with different spatial structures/assessing sub-stocks independent of the full stock?
    - using model/analyses with different configurations/assumptions/data when assessing the same stock/sub-stock?
    - using different management quantities (e.g., $F_{30\%}$ and escapement) through time for evaluating management changes and making additional management changes?
- What is an appropriate timeframe for a red drum regulatory regime before evaluating its impact on stock status?

The TC noted estimates from a stockwide assessment and assessment at a different spatial scale (e.g., state-specific) would not be directly comparable. For example, fishing mortality estimates from these two analyses would differ due to different spatial scales. Complications from comparing estimates from various analyses are exacerbated by different data treatments and choices made by the different groups conducting the analyses. Two concrete examples were provided on the call. First, dealt with the treatment of catch per unit effort (CPUE) derived from MRIP data in the 2024 ASMFC stock assessment and 2020 Florida state-specific assessments. The ASMFC assessment excluded this CPUE data because it showed trends different than fishery-independent indices and there were concerns with hyperstability

in the catch rates, while the Florida assessment included these data as indices of abundance. Second, was the difference in treatment of selectivity patterns between the same regional and Florida assessment for the recreational fishery. In the regional assessment, it was assumed there was a dome-shaped selectivity pattern with declining selectivity on larger red drum. In the Florida assessment, logistic selectivity was assumed, such that all fish above approximately 50 cm were fully selected by the gear, though not retained above the slot maximum. These, and other, differences are likely to lead to differences between assessment estimates. It was also noted that spatial distribution of data can impact analysis estimates. More data rich areas may have a stronger influence on overall analysis estimates than more data-limited areas.

The primary concern identified by the TC with management actions informed by analysis at a spatial scale smaller than the stock unit is the potential for localized depletion. Localized depletion would have an adverse impact on the stock unit as a whole and impact other areas within the stock not considered in the analysis. This is particularly relevant if different methods to estimate fishing mortality at the sub-stock level are used to liberalize regulations at the sub-stock level as opposed to restricting regulations beyond a stock wide minimum, which is typically how different methods have been used previously in red drum management. It was also noted more research is needed to better understand the mechanisms behind the mixing of sub-stocks of red drum.

In addition to challenges comparing estimates of the same quantity from various analyses, there may also be differences in quantities being proposed for assessing stock status and informing regulatory changes. Management quantities considered in past assessments include spawning potential ratio (SPR) and escapement. Both have advantages and disadvantages. Spawning potential ratios include fishing mortality information on adults, but there are data limitations, particularly spatially across the stock unit, to inform these adult fishing mortality estimates. Escapement includes fishing mortality information on the more data-rich sub-adult components of the stock but does not include information on adult mortality and assumes there have been no changes to adult mortality. Adult discard mortality in trophy red drum fisheries was identified as a concern during the 2024 stock assessment. Evaluating the same population according to different quantities through time may lead to conflicting management advice.

During the 2024 stock assessment, the TC recommended the next benchmark assessment be completed in 2029. This timeline was revised through Board motion at the 2025 Spring Commission meeting to conduct the next benchmark assessment with a terminal year of 2031 (completion in 2033). Upon evaluating the management change impact on stock status, the TC believes the timeframe necessary with improvement in the stock is dependent on the intent of the regulatory change and how informative data are for reflecting the change. Different quantities are likely to show responses on different timeframes. Regulation changes targeting harvest of sub-adult fish may show immediate impacts to fishing mortality levels through assessments while impacts to reproductive potential and realized recruitment may take considerably longer (≈20+ years) to detect through assessments. Although changes in recruitment may be observed in the short term, it is difficult to decouple environmental impacts from underlying stock status during these short time frames given high variability observed in past red drum recruitment. A year or two years of improvement in one or more areas of the stock are likely not true indications of long-term stock recovery and several years of improvement are necessary to gauge management effectiveness. Generally, the TC believes at least a sub-adult generation time, similar to the five-year period recommended by the TC for the next benchmark assessment, is an appropriate minimum for assessing the impact of regulatory changes to stock status and considering new regulations.

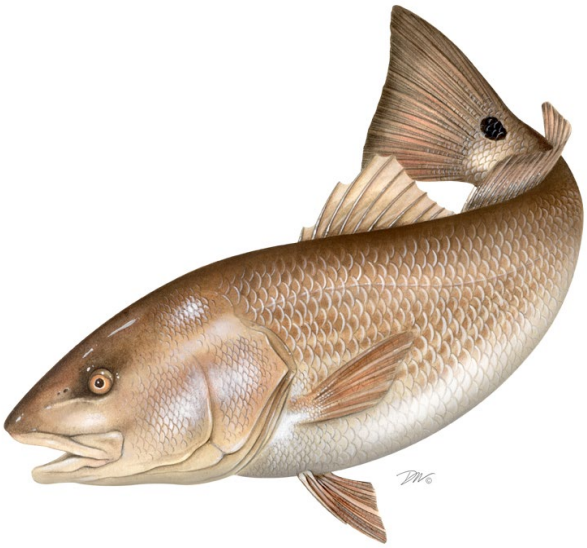
ATLANTIC STATES MARINE FISHERIES COMMISSION

REVIEW OF THE INTERSTATE FISHERY MANAGEMENT PLAN

FOR

RED DRUM
(*Sciaenops ocellatus*)

2024 FISHING YEAR



Prepared by the Plan Review Team
Drafted July 2025

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

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DRAFT FOR BOARD REVIEW

I. Status of the Fishery Management Plan

Date of FMP Approval:	Original FMP – October 1984
Amendments & Addenda:	Amendment 1 – October 1991 Amendment 2 – June 2002 Addendum 1 – August 2013
Management Areas:	The Atlantic coast distribution of the resource from New Jersey through Florida Northern: New Jersey through North Carolina Southern: South Carolina through the east coast of Florida
Active Boards/Committees:	Sciaenids Management Board, Red Drum Technical Committee, Stock Assessment Subcommittee, Plan Development Team, Plan Review Team, South Atlantic Species Advisory Panel

The Atlantic States Marine Fisheries Commission (ASMFC) adopted an Interstate Fishery Management Plan (FMP) for Red Drum in 1984. The original management unit included the states from Maryland to Florida. In 1988, the Interstate Fisheries Management Program (ISFMP) Policy Board requested all Atlantic coastal states from Maine to Florida implement the plan's recommended management regulations to prevent development of northern markets for southern fish. The states of New Jersey through Florida are now required to follow the FMP, while Maine through New York (including Pennsylvania) are encouraged to implement consistent provisions to protect the red drum spawning stock.

In 1990, the South Atlantic Fishery Management Council (Council) adopted an FMP for red drum that defined overfishing and optimum yield (OY) consistent with the Magnuson Fishery Conservation and Management Act of 1976. Adoption of this plan prohibited the harvest of red drum in the exclusive economic zone (EEZ), a moratorium that remains in effect today. Recognizing all harvest would take place in state waters, the Council FMP recommended states implement measures necessary to achieve the target level of at least 30% escapement.

Consequently, ASMFC initiated Amendment 1 in 1991, which included the goal to attain optimum yield from the fishery over time. Optimum yield was defined as the amount of harvest that could be taken while maintaining the level of spawning stock biomass per recruit (SSBR) at or above 30% of the level which would result if fishing mortality was zero. However, a lack of information on adult stock status resulted in the use of a 30% escapement rate of sub-adult red drum to the off-shore adult spawning stock.

Substantial reductions in fishing mortality were necessary to achieve the escapement rate; however, the lack of data on the status of adult red drum along the Atlantic coast led to the adoption of a phase-in approach with a 10% SSBR goal. In 1991, states implemented or maintained harvest controls necessary to attain the goal.

As hoped, these management measures led to increased escapement rates of juvenile red drum. Escapement estimates for the northern region of New Jersey through North Carolina

(18%) and the southern region of South Carolina through Florida (17%) were estimated to be above the 10% phase-in goal, yet still below the ultimate goal of 30% (Vaughan and Carmichael 2000). North Carolina, South Carolina, and Georgia implemented substantive changes to their regulations from 1998-2001 that further restricted harvest.

The Council adopted new definitions of OY and overfishing for red drum in 1998. Optimum yield was redefined as the harvest associated with a 40% static spawning potential ratio (sSPR), overfishing as an sSPR less than 30%, and an overfishing threshold as 10% sSPR. In 1999, the Council recommended management authority for red drum be transferred to the states through the Commission's Interstate Fishery Management Program (ISFMP) process. This was recommended, in part, due to the inability to accurately determine an overfished status, and therefore stock rebuilding targets and schedules, as required under the revised Sustainable Fisheries Act of 1996. The transfer necessitated the development of an amendment to the interstate FMP in order to include the provisions of the Atlantic Coastal Fisheries Cooperative Management Act.

ASFMC adopted Amendment 2 to the Red Drum FMP in June 2002 (ASMFC 2002), which serves as the current management plan. The goal of Amendment 2 is to achieve and maintain the OY for the Atlantic coast red drum fishery as the amount of harvest that can be taken by U.S. fishermen while maintaining the sSPR at or above 40%. There are four plan objectives:

- Achieve and maintain an escapement rate sufficient to prevent recruitment failure and achieve an sSPR at or above 40%.
- Provide a flexible management system to address incompatibility and inconsistency among state and federal regulations which minimizes regulatory delay while retaining substantial ASMFC, Council, and public input into management decisions; and which can adapt to changes in resource abundance, new scientific information, and changes in fishing patterns among user groups or by area.
- Promote cooperative collection of biological, economic, and sociological data required to effectively monitor and assess the status of the red drum resource and evaluate management efforts.
- Restore the age and size structure of the Atlantic coast red drum population.

The management area extends from New Jersey through the east coast of Florida, and is separated into a northern and southern region at the North Carolina/South Carolina border. The sSPR of 40% is considered a target; an sSPR below 30% (threshold level) results in an overfishing determination for red drum. Amendment 2 required all states within the management unit to implement appropriate recreational bag and size limit combinations needed to attain the target sSPR, and to maintain current, or implement more restrictive, commercial fishery regulations. All states were in compliance by January 1, 2003. See Table 1 for state commercial and recreational regulations in 2022.

Following the approval of Amendment 2 in 2002, the process to transfer management authority to ASMFC began, including an Environmental Assessment and public comment period. The final

rule became effective November 5, 2008. It repeals the federal Atlantic Coast Red Drum Fishery Management Plan and transfers management authority of Atlantic red drum in the exclusive economic zone from the South Atlantic Fishery Management Council to the Atlantic States Marine Fisheries Commission.

The Board approved Addendum I to Amendment 2 in August 2013. The Addendum revised the habitat section of Amendment 2 to include current information on red drum spawning habitat and life-stages (egg, larval, juvenile, sub-adult, and adult). It also identified and described the distribution of key habitats and habitats of concern.

II. Status of the Stocks

The 2024 Red Drum Benchmark Stock Assessment and Peer Review Report indicates the southern stock (South Carolina through the east coast of Florida) is overfished and experiencing overfishing (Figures 1 & 2). The three-year average spawning stock biomass (SSB) at the end of the assessment was below the threshold and the spawning potential ratio (SPR) average of the last three years was less than $SPR_{30\%}$ (20.7%).

The northern stock of red drum (New Jersey through North Carolina) is not overfished and not experiencing overfishing (Figure 3). Despite the positive stock status determination for the northern stock in the last year of the assessment, fishing mortality rates have been on the rise and are approaching the fishing mortality threshold. Updates of the traffic light analysis (TLA), used to assess the northern stock, are recommended to monitor these trends closely in coming years.

III. Status of the Fishery

Red drum landings from New Jersey through the east coast of Florida in 2024 are estimated at 8.1 million pounds (Tables 3 & 4; Figure 4). In 2024, 65% of the total landings came from the southern region where the fishery is exclusively recreational, and 35% from the northern region (Figure 5).

Northern Region (NJ-NC)

Red drum landings in the northern region totaled 2.8 million pounds in 2024, an increase of approximately 44% from the previous year (Tables 3 & 4). Both commercial and recreational landings increased in 2024. Commercial landings totaled 237,034 pounds or 8% of the combined commercial and recreational harvest in the northern region, with 78% of commercial landings coming from North Carolina (Figure 6). Virginia commercial landings in 2024 increased to the highest value in the state's time series since 1965. In North Carolina, a daily commercial trip limit and an annual cap of 250,000 pounds with payback of any overage constrained the commercial harvest. Unique to this state, the red drum fishing year extends from September 1 to August 31. In 2008, the Board approved use of this fishing year to monitor the cap. During the 2023/2024 fishing year, North Carolina landed 185,259 pounds of the 250,000-pound annual landings cap.

Recreational landings in the northern region in 2024 were estimated to be 2.6 million pounds, an increase from the previous year's estimates of recreational harvest at 1.8 million pounds (Table 4). North Carolina is estimated to have 1.3 million pounds of recreational landings, followed by Virginia with 1.1 million pounds. Virginia and North Carolina red drum recreational landings increased by 87% and 21% from the previous year, respectively. The number of fish harvested in the recreational fishery in 2024 was 607,080 fish, an increase of 57% from 2023 (Table 5). The number of fish released in the northern region, 3.2 million fish, in 2024 increased by 19% from 2023 (Figure 7). It is estimated that 8% of released fish die as a result of being caught, resulting in an estimated 256,795 dead discarded fish in 2024 (Table 6). Recreational removals from the fishery are thus estimated to be 863,875 fish in 2024 (Figure 7 and 8).

Southern Region (SC-FL)

The southern region had no commercial landings; Florida commercial harvest has been prohibited since January 1988. South Carolina and Georgia designated red drum as a gamefish, banning commercial harvest and sale since 1987 and 2013, respectively.

Recreational landings in the southern region in 2024 were estimated to be 5.3 million pounds, a 75% increase from 2023 (Table 4). An increase in recreational landings was observed in all three states in 2024. Florida is estimated to have approximately 2.6 million pounds of recreational landings, followed by Georgia with 1.4 million pounds, and South Carolina with 1.3 million pounds. Recreational landings in Florida, Georgia, and South Carolina increased by 74%, 66%, and 87%, respectively. The number of fish harvested in the recreational fishery in 2024 was 1.7 million fish, which was a 64% increase from recreational harvest in 2023 (Table 4). The number of fish released in the southern region in 2024 was 11.0 million fish, which was an increase of 29% from 2023 when 8.5 million fish were released and a time series high (1981-2024; Figure 7). It is estimated that 8% of released fish die as a result of being caught, resulting in an estimated 881,075 dead discarded fish in 2024 (Table 6). Recreational removals from the fishery are thus estimated to be 2.6 million fish in 2024, also a time series high (Figures 7 & 8).

IV. Status of Assessment Advice

Current stock status information comes from the 2024 stock assessment (ASMFC 2024) completed by the ASMFC Red Drum Stock Assessment Subcommittee (SAS) and Technical Committee (TC), peer reviewed by an independent panel of experts through the SEDAR process, and approved by the Sciaenids Management Board in October 2024 for use in management decisions. The two stocks were assessed separately, using different methods. The southern stock was assessed using the Stock Synthesis (SS) assessment model. The SS model estimates annual SPR as well as SSB. SSB reference points have not previously been defined for red drum, but were recommended during these assessments as the SSB produced when fishing at the overfishing threshold (i.e., $SSB_{30\%}$, SSB threshold) and the fishing mortality target ($SSB_{40\%}$, SSB target). Stock status is determined from three-year averages of SPR and SSB at the end of the assessment time series (2019-2021 fishing years).

A robust, technically-sound SS model could not be developed for the northern stock, so the stock was assessed using a traffic light analysis (TLA). The TLA assigns a color (red, yellow, or

green) to categorize relative levels of metrics that reflect the condition of red drum adult abundance and fishery performance (i.e., fishing mortality). The reference period used for the TLA was the previous stock assessment period that had available data and was determined to not be in an overfishing state (1996-2013 for the northern stock). The red drum adult abundance and fishery performance metrics were used to determine overfished and overfishing stock status, respectively. To relate the TLA stock status determinations to the SS stock status determinations, which consider estimates during the last three years of the assessment, the TLA identified an overfished or overfishing status if determinations for any of the last three years were red.

Several states have also conducted state-specific assessments. In 2025, a state-specific stock assessment was completed by South Carolina, which indicated the South Carolina population of red drum was overfished, not experiencing overfishing but headed in a trajectory that would indicate overfishing would occur in 1 to 2 years with current fishing effort (Ballenger and Schlick 2025).

In 2020, Florida completed a stock assessment for red drum in Florida state waters, and found the Atlantic Coast red drum stock was not overfished and overfishing was not occurring (Addis 2020). The northeast region (Flagler through Nassau counties) exceeded the Commission's target escapement rate of 40%. The formally defined southeast region (Miami-Dade-Volusia counties) exceeded the escapement rate in the terminal year (2019), but does not meet the current escapement rate target. Overall, the state of Florida has an escapement rate higher than the Commission's goal in Amendment 2 of 40%.

V. Status of Research and Monitoring

No monitoring or research programs are annually required of the states except for the submission of a compliance report. Fishery-dependent (other than catch and effort data) monitoring programs are conducted from Maryland to Florida, with biological and sportfish carcass recovery programs collecting age, length, and sex data. Virginia, North Carolina, and South Carolina also conduct sportfish tagging programs. Fishery-independent monitoring programs that directly target or may encounter red drum are conducted in New Jersey, Delaware, North Carolina, South Carolina, Georgia, and Florida. Data collected includes CPUE, biological data, YOY indices, and mark-recapture data. See Table 2 for details on the fishery independent indices and ongoing surveys.

VI. Status of Management Measures and Issues

Fishery Management Plan

Amendment 2 was fully implemented by January 1, 2003, providing the management requirements for 2024. Requirements include: recreational regulations designed to achieve at least 40% sSPR, a maximum size limit of 27 inches or less, and current or more stringent commercial regulations. States are also required to have in place law enforcement capabilities adequate to successfully implement their red drum regulations. In August 2013, the Board approved Addendum I to Amendment 2 of the Red Drum FMP. The Addendum revises the habitat section of Amendment 2 to include the most current information on red drum spawning

habitat for each life stage (egg, larval, juvenile, sub-adult, and adult). It also identifies the distribution of key habitats and habitats of concern, including potential threats and bottlenecks.

In May 2025, the Board initiated Draft Addendum II to Amendment 2, with the following objectives:

1. Establish a process for states to propose changes to their regulations to meet the required fishing mortality level;
2. Establish a pathway outside of the Commission's assessment process which allows for states to propose new methods to estimate fishing mortality (F) for the evaluation of future regulation changes;
3. Modify the FMP to require states to set regulations that would be expected to not exceed the threshold $F_{30\%}$ for fishing mortality in their state;
4. Consider changes to the recreational bag limits and slot limits for the northern region of red drum to address increasing fishing mortality; and
5. Update *de minimis* provisions of the FMP.

The Board will meet at the Commission's Summer Meeting (August 2025) to consider approval of Addendum II for public comment.

De Minimis Requests
New Jersey and Delaware requested *de minimis* status through the annual reporting process. While Amendment 2 does not include a specific method to determine whether a state qualifies for *de minimis*, the PRT chose to evaluate an individual state's contribution to the fishery by comparing the two-year average of total landings of the state to that of the management unit. New Jersey and Delaware each harvested zero percent of the two-year average of total landings. *De minimis* status does not exempt either state from any requirement; it may exempt them from future management measures implemented through addenda to Amendment 2, as determined by the Board.

VII. Implementation of FMP Compliance Requirements for 2024

The PRT found no inconsistences between state compliance reports and the requirements of Amendment 2.

VIII. Recommendations of the Plan Review Team

Management and Regulatory Recommendations
Consider approval of the *de minimis* requests by New Jersey and Delaware.

Research Recommendations

Research recommendations can be found in the 2024 Red Drum Benchmark Stock Assessment and Peer Review Report and the 2022 Simulation Assessment and Peer Review Report. The PRT also stressed the importance following additional research recommendations:

- Implement surveys (e.g., logbooks, electronic methods, etc.) to determine the length composition (and age data, if possible) of recreational discards (B2) of red drum. This information has been highlighted as the single largest data gap in previous assessments.

- Continue sampling of adult red drum surveys to determine abundance, size, age, sex composition, and maturity of the adults. Additionally, investigate the possibility of senescence in female red drum. Investigate how targeting of adult red drum spawning and post-spawning aggregations via catch-and-release hook-and-line fisheries by anglers is affecting the reproductive potential of the stock due to both direct lethal and sub-lethal effects.

- Assess the effects of environmental factors and habitat loss on stock density/year class strength. Determine whether natural environmental perturbations and habitat loss affect recruitment and modify relationships with spawning stock size.

- Support and conduct applied research to evaluate the social and economic value of this important, primarily recreational fishery. Accomplishing this includes continued support of the Marine Recreational Fishing Expenditures Survey that is conducted every three to five years by NOAA Fisheries as well as conducting applied research on projecting social and/or economic estimated impacts associated with this fishery.

IX. References

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X. Figures

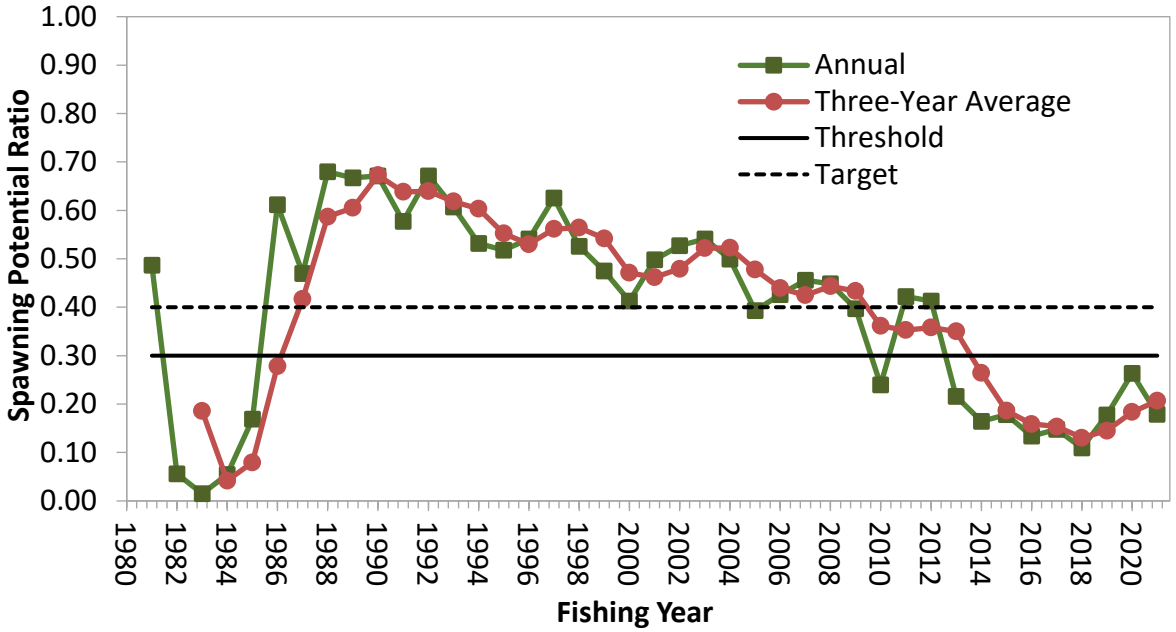

Figure 1. Annual values (green squares) and the three-year average (orange circles) spawning potential ratio (SPR) from the southern stock Stock Synthesis model. The threshold SPR is 30% (solid line) and the target SPR is 40% (dashed line) (Source: ASMFC 2024).

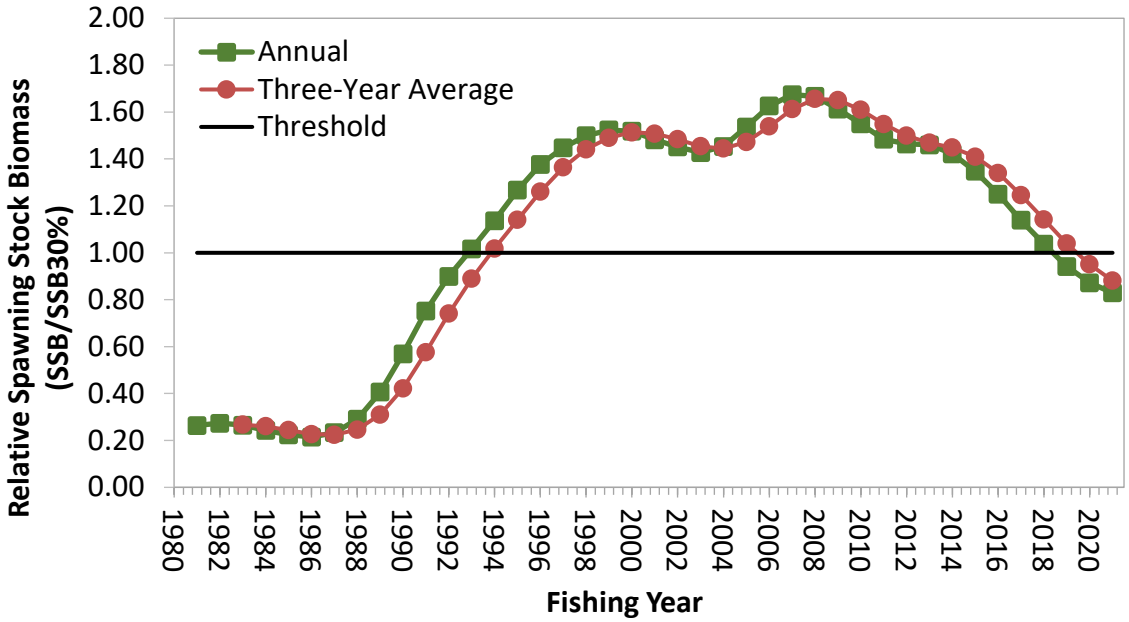

Figure 2. The annual (green squares) and three-year average (red circles) relative spawning stock biomass ($SSB/SSB_{30\%}$) for the southern stock, with the threshold (black line) (Source: ASMFC 2024)**.**

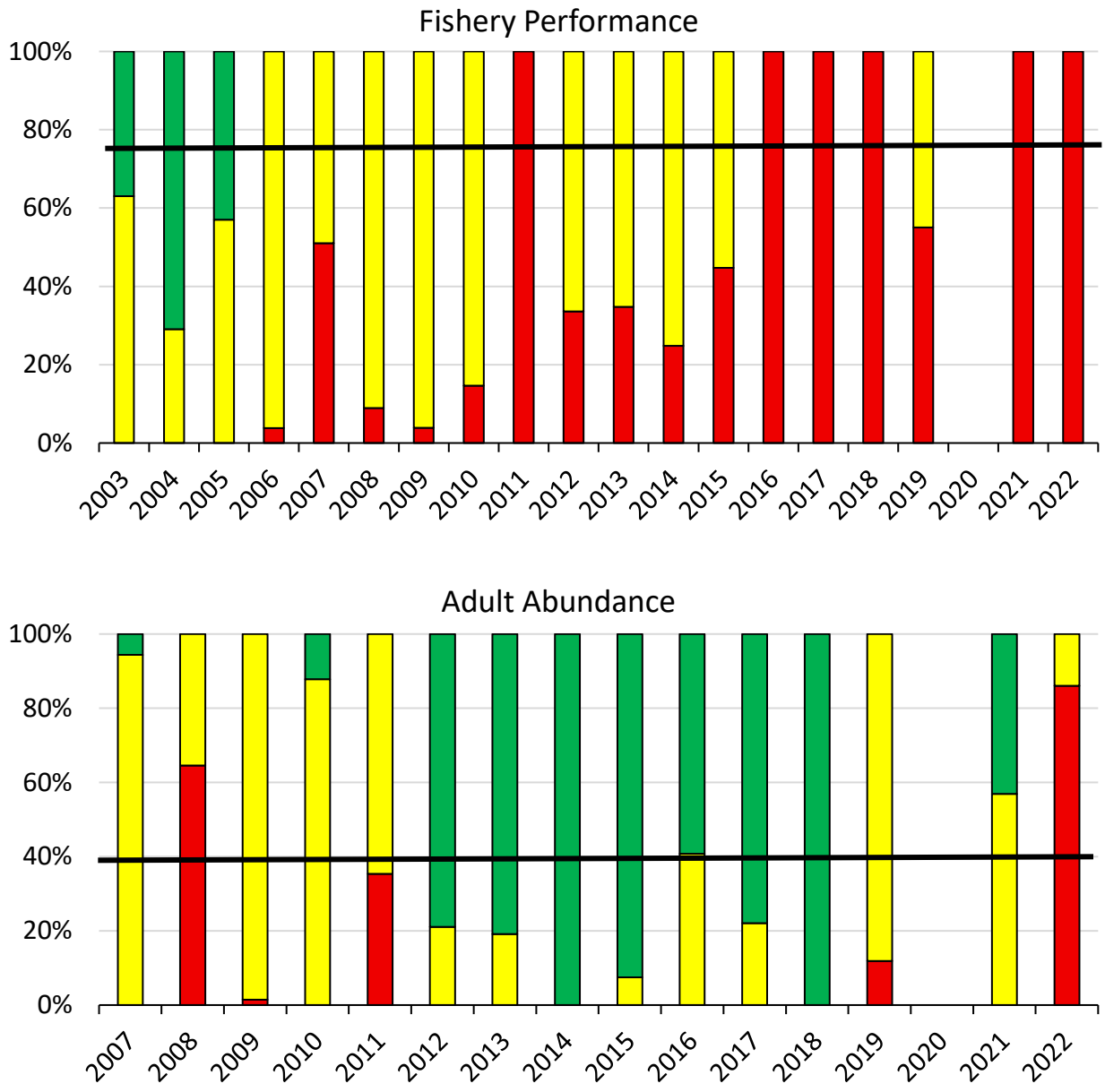

Figure 3. Annual Traffic Light Analysis (TLA) results for the Fishery Performance and Adult Abundance characteristics in the northern stock. Threshold values are represented by the solid horizontal line. The color at the threshold is the color determination for that year. TLA identifies an overfishing (Fishery Performance) or overfished (Adult Abundance) status if determinations for any of the last three years were red (Source: ASMFC 2024).

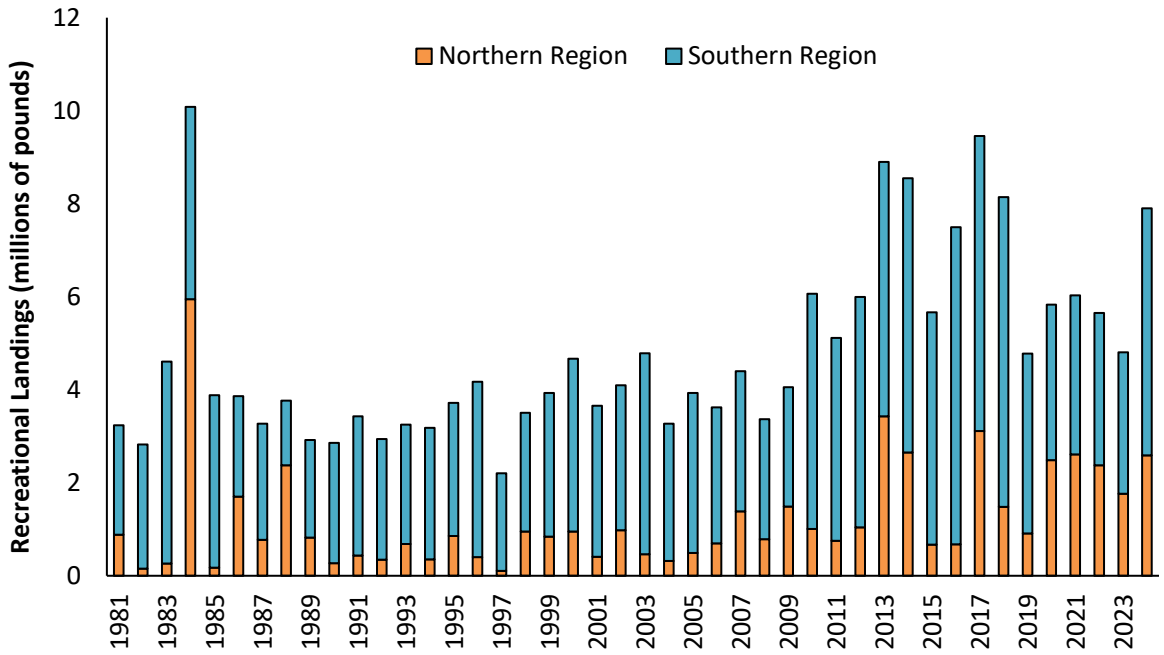

Figure 4. Recreational landings of red drum by region (1981-2024). See Table 4 for values and data sources.

*Recreational weight data for NC-FL in 1988 is unavailable. Recreational harvests in pounds were estimated for these states in this year by multiplying each state's 1988 harvest in numbers of fish by its time series average weight.

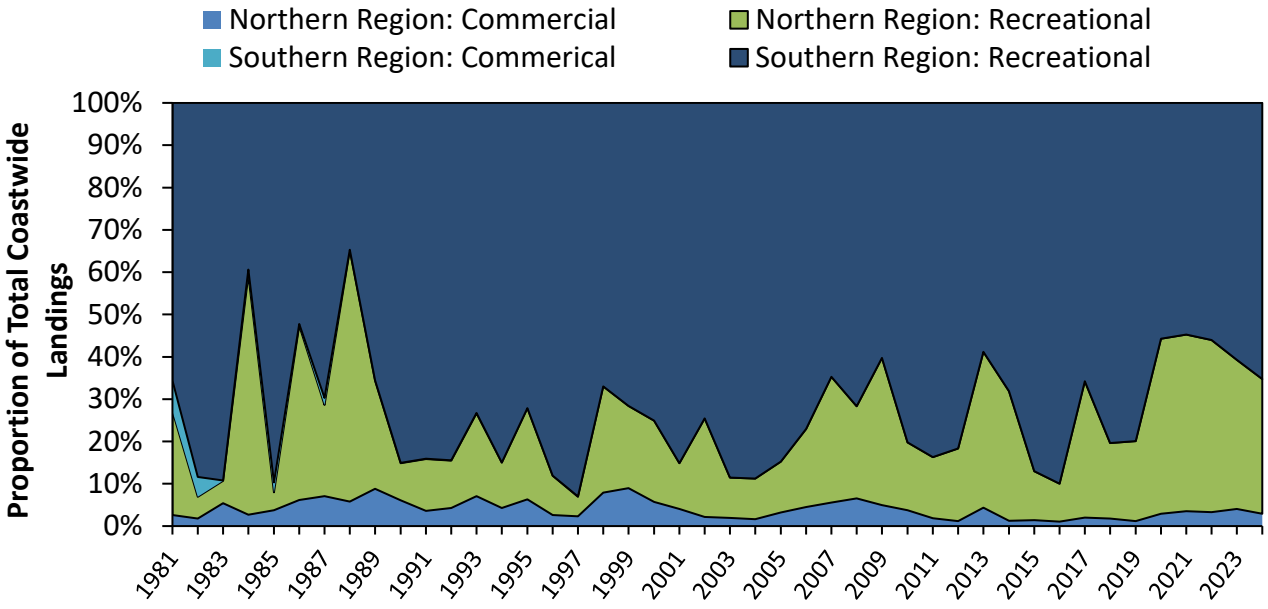

Figure 5. Proportion of regional, sector-specific landings to total coastwide landings (pounds) from 1981-2024. See Tables 3 and 4 for data sources.

Figure 6. Commercial landings of red drum from the Northern Region (1981-2024). See Table 3 for values and data sources.

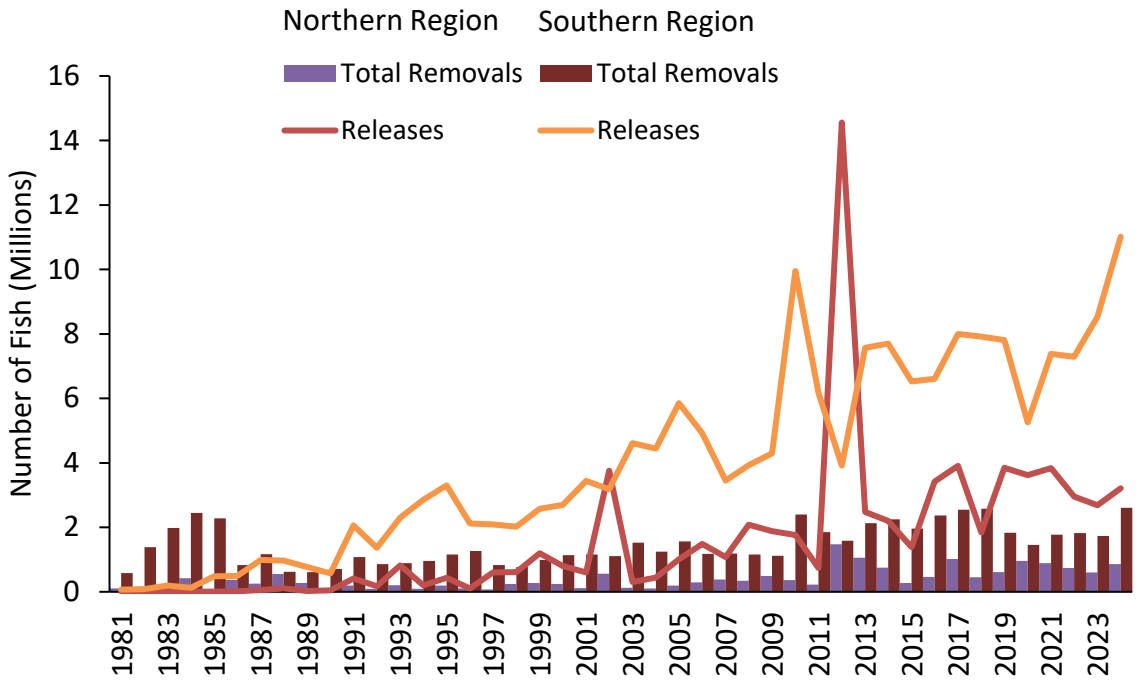

Figure 7. Total recreational removals (numbers) compared to recreational releases of red drum (numbers) for 1981-2024. See Tables 5 and 6 for values and data sources.

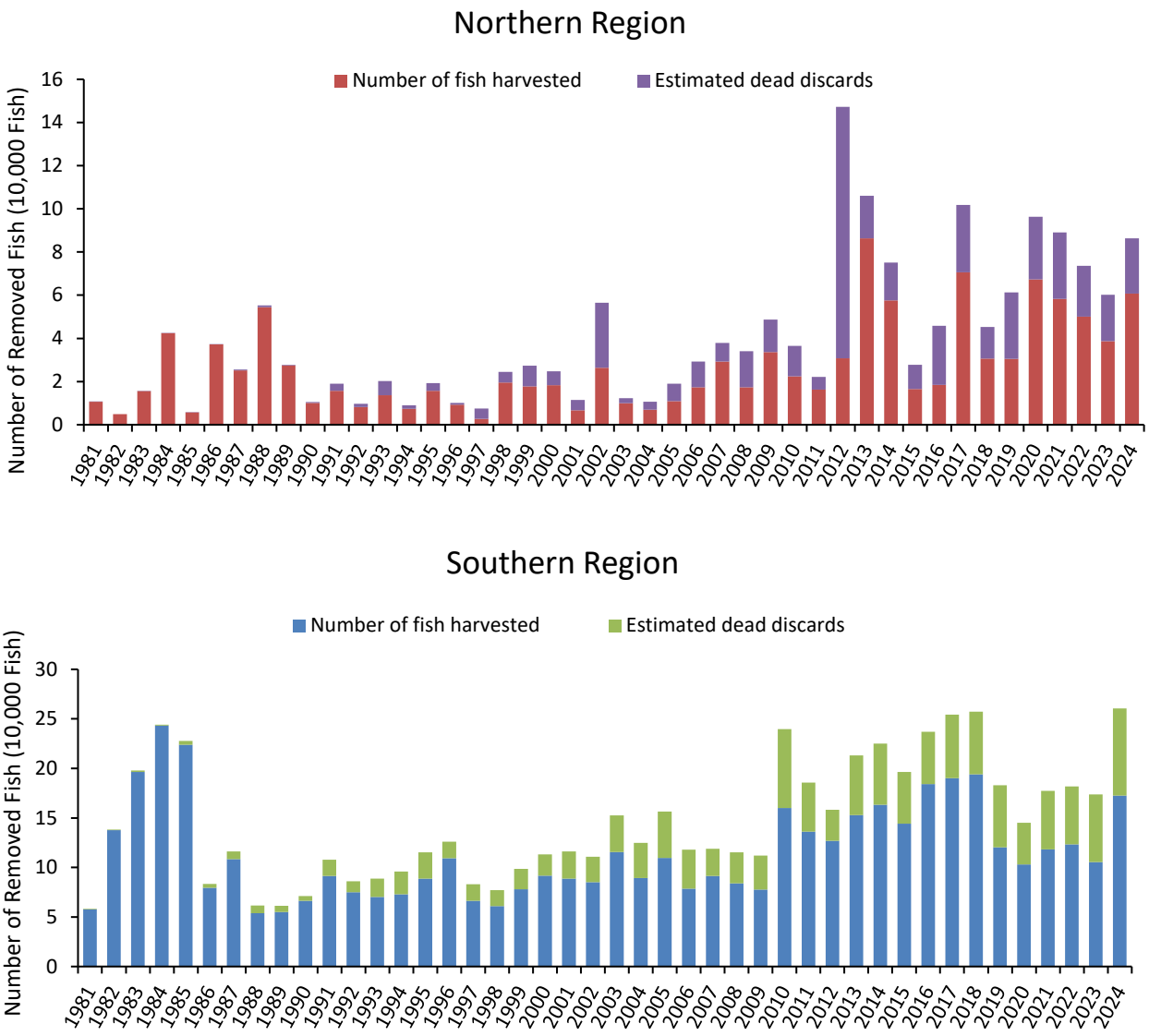

Figure 8. Recreational removals (landings and dead discards) of red drum (numbers) by region from 1981-2024. Dead discards are estimated by applying an 8% discard mortality rate to alive releases. See Tables 5 & 6 for values and data sources.

XI. Tables

Table 1. Red drum regulations for 2024. The states of New Jersey through Florida are required to meet the requirements in the FMP; states north of New Jersey are encouraged to follow the regulations. All size limits are total length.

State	Recreational	Commercial
NJ	18" - 27", 1 fish	18" - 27", 1 fish
DE	20" - 27", 5 fish	20" - 27", 5 fish
MD	18" - 27", 1 fish	18" - 25", 5 fish
PRFC	18" - 25", 5 fish	18" - 25", 5 fish
VA	18" - 26", 3 fish	18" - 25", 5 fish
NC	18" - 27", 1 fish	18" - 27"; 250,000 lbs harvest cap with overage payback (150,000 lbs Sept 1- April 30; 100,000 lbs May 1-Aug 31); harvest of red drum allowed with 7 fish daily trip limit; daily landed catch of flounder, bluefish, black drum or striped mullet must exceed daily catch of drum; small mesh (<5" stretched mesh) gill nets attendance requirement May 1 - November 30. Fishing year: September 1 – August 31.
SC	15" - 23", 2 fish per person per day bag limit and 6 fish per boat per day boat limit	Gamefish Only
GA	14" - 23", 5 fish	Gamefish Only
FL	18" - 27"; Northeast Region – 1 fish per person per day, 4 fish vessel limit; Indian River Lagoon Region – 0 fish per person per day, 0 vessel limit; Southeast Region – 1 fish per person per day, 2 fish vessel limit (effective September 1, 2022).	Sale of native fish prohibited

Table 2. Overview of each state's fishery independent surveys.

State	Fishery Independent Monitoring Details
New Jersey	Five annual nearshore trawl surveys conducted since 1988, in January/February, April, June, August, and October. Length and weight data, and catch per unit effort (CPUE) in number of fish per tow and biomass per tow recorded for all species.
Delaware	30-ft bottom trawl survey and 16-ft bottom trawl survey. Neither survey has ever captured red drum.
North Carolina	Seine survey since 1991 produces age-0 abundance index. Gill net survey in Pamlico Sound since 2001 characterizes size and age distribution, produces abundance index, improves bycatch estimates, and studies habitat usage. Longline survey since 2007 produces adult index of abundance and tags fish.
South Carolina	Estuarine trammel net survey for subadults. Electrofishing survey in low salinity estuarine areas for juveniles/subadults. Inshore and coastal bottom longline survey for biological data and adult abundance index. Genetic sub-sampling and tagging conducted during these three surveys.
Georgia	Estuarine trammel net survey for subadult biological data and abundance index. Estuarine gill net survey for young-of-year (YOY) biological data and abundance index. Bottom longline survey for adult biological data and abundance index.
Florida	Seine surveys characterizing young-of-year (YOY) (<40 mm standard length) and sub-adult (>299 mm) abundance along the northeast (NE) and southeast (SE) Florida coasts.

Table 3. Commercial landings (pounds) of red drum by state, 2015-2024. (Source: personal communication with ACCSP, for years prior to 2024 and state compliance reports for 2024, except as noted below.) Note that SC, GA, and FL do not have commercial red drum fisheries, and years with incidental landings are included in the total.

Year	NJ to PRFC	VA	NC	Total
2015	421	814	80,282	81,516
2016	197	1,898	77,833	79,927
2017	644	6,971	186,411	194,032
2018	C	885	144,464	145,500
2019	32	1,650	56,393	58,107
2020	104	7,989	165,670	173,867
2021	217	19,584	200,825	220,843
2022	57	17,411	175,029	192,554
2023	C	16,899	186,414	204,500
2024	C	51,339	184,564	237,034

*C indicates confidential landings, and totals have been rounded to protect confidentiality.

Table 4. Recreational landings (pounds) of red drum by state, 2015-2024. (Source: personal communication with MRIP for data prior to 2024; state compliance reports for 2024)

Year	NJ	DE	MD	VA	NC	Northern Region Total
2015				98,329	567,730	666,059
2016				45,451	633,496	678,947
2017			6,782	1,628,692	1,475,852	3,111,326
2018				31,566	1,452,358	1,483,924
2019	4,107		2,113	470,940	436,219	913,379
2020		1,544	115,181	610,001	1,758,789	2,485,515
2021			5,441	1,123,953	1,479,550	2,608,944
2022				762,729	1,615,108	2,377,837
2023			53,253	588,763	1,120,661	1,762,677
2024			136,387	1,100,036	1,354,244	2,590,667

Year		SC	GA	FL	Southern Region Total
2015		656,747	394,787	3,949,000	5,000,534
2016		536,550	586,235	5,694,370	6,817,155
2017		1,048,249	826,857	4,470,905	6,346,011
2018		643,213	1,186,306	4,829,344	6,658,863
2019		862,124	630,294	2,372,773	3,865,191
2020		671,004	535,674	2,135,395	3,342,073
2021		441,191	506,962	2,473,995	3,422,148
2022		584,289	1,081,410	1,605,556	3,271,255
2023		688,722	826,719	1,527,754	3,043,195
2024		1,286,743	1,373,804	2,652,616	5,313,163

Table 5. Recreational landings (numbers) of red drum by state, 2015-2024. (Source: personal communication with MRIP for data prior to 2024; state compliance reports for 2024)

Year	NJ	DE	MD	VA	NC	Northern Total
2015				22,102	143,876	165,978
2016				15,866	169,195	185,061
2017			4,943	347,145	353,716	705,804
2018				6,334	299,577	305,911
2019	1,331		1,258	205,824	97,186	305,599
2020		493	44,975	214,069	413,419	672,956
2021			1,415	256,281	325,662	583,358
2022				163,962	336,280	500,242
2023			17,896	137,063	232,133	387,092
2024			42,527	242,246	322,307	607,080

Year		SC	GA	FL	Southern Total
2015		258,493	201,049	981,685	1,441,227
2016		241,224	289,928	1,309,505	1,840,657
2017		455,887	467,522	978,520	1,901,929
2018		262,725	606,836	1,069,604	1,939,165
2019		333,315	271,970	599,348	1,204,633
2020		239,874	230,026	560,382	1,030,282
2021		210,454	261,488	710,091	1,182,033
2022		219,659	607,512	406,391	1,233,562
2023		280,527	366,498	407,618	1,054,643
2024		513,931	649,659	561,731	1,725,321

Table 6. Recreational alive releases (numbers) of red drum by state, 2015-2024. (Source: personal communication with MRIP for data prior to 2024; state compliance reports for 2024)

Year	NJ	DE	MD	VA	NC	Northern Region Total	Northern Region Dead Discards
2015			1,456	78,590	1,308,072	1,388,118	111,049
2016		2,598	47,908	164,575	3,203,452	3,418,533	273,483
2017			14,148	1,722,618	2,165,656	3,902,422	312,194
2018	4,715		21,384	85,338	1,729,260	1,840,697	147,256
2019		474	5,740	865,957	2,976,601	3,848,772	307,902
2020			217,710	716,277	2,686,150	3,620,137	289,611
2021		1,147	22,218	1,272,609	2,545,371	3,841,345	307,308
2022		2,116	18,010	770,731	2,160,742	2,951,599	236,128
2023	881	595	98,500	1,145,885	1,439,370	2,684,350	214,748
2024			358,323	1,041,993	1,809,302	3,209,618	256,769

Year		SC	GA	FL	Southern Region Total	Southern Region Dead Discards
2015		1,432,754	961,277	4,132,461	6,526,492	522,119
2016		1,266,931	601,153	4,734,303	6,602,387	528,191
2017		2,094,199	1,176,524	4,727,411	7,998,134	639,851
2018		1,493,803	1,045,570	5,375,011	7,914,384	633,151
2019		2,911,653	1,206,707	3,688,884	7,807,244	624,580
2020		1,705,054	393,368	3,154,500	5,252,922	420,234
2021		1,894,088	794,030	4,689,059	7,377,177	590,174
2022		1,289,714	1,814,251	4,188,940	7,292,905	583,432
2023		2,320,184	1,450,988	4,760,870	8,532,042	682,563
2024		2,764,695	1,832,338	6,416,407	11,013,440	881,075