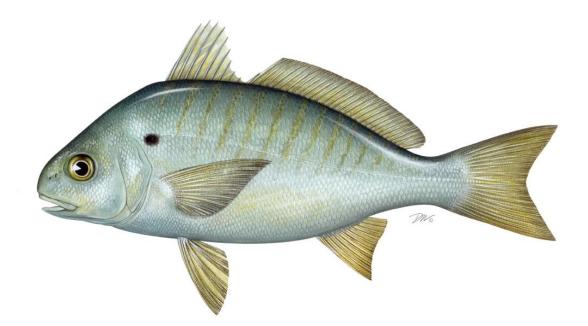
# ATLANTIC STATES MARINE FISHERIES COMMISSION

# **REVIEW OF THE INTERSTATE FISHERY MANAGEMENT PLAN**

FOR

SPOT (*LEIOSTOMUS XANTHURUS*)

**2021 FISHING YEAR** 



Drafted by the Plan Review Team Approved February 2023



Sustainable and Cooperative Management of Atlantic Coastal Fisheries

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#### I. Status of the Fishery Management Plan

Date of FMP Approval:	October 1987; Omnibus Amendment August 2011
Amendments and Addenda:	Addendum II (2014); Addendum III (February 2020)
Management Area:	The Atlantic coast distribution of the resource from Delaware through Florida
Active Boards/Committees:	Sciaenids Management Board; Spot Plan Review Team; Spot Technical Committee; South Atlantic Species Advisory Panel

The Fishery Management Plan (FMP) for Spot was adopted in 1987 and includes the states from Delaware through Florida (ASMFC 1987). In reviewing the early plans created under the Interstate Fisheries Management Plan process, the ASMFC found the Spot FMP to be in need of evaluation and possible revision. A Wallop-Breaux grant from the U.S. Fish and Wildlife Service was provided to conduct a comprehensive data collection workshop for spot. The October 1993 workshop at the Virginia Institute of Marine Science was attended by university and state agency representatives from six states. Presentations on fishery-dependent and fishery-independent data, population dynamics, and bycatch reduction devices were made and discussed. All state reports and a set of recommendations were included in the workshop report (Kline and Speir 1993).

Subsequent to the workshop and independent of it, the South Atlantic State/Federal Fisheries Management Board (Management Board) reviewed the status of several plans in order to define the compliance issues to be enforced under the Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA). The Management Board found recommendations in the plan to be vague and perhaps no longer valid, and recommended that an amendment be prepared to the Spot FMP to define the management measures necessary to achieve the goals of the FMP. In their final schedule for compliance under the ACFCMA, the ISFMP Policy Board adopted the finding that the FMP does not contain any management measures that states are required to implement. In August 2009, the Management Board expanded the initiated amendment to the Spanish Mackerel FMP to include spot and spotted seatrout, creating the Omnibus Amendment for Spot, Spotted Seatrout and Spanish Mackerel. The goal of the Omnibus Amendment was to update all three plans with requirements specified under the Atlantic Coastal Fisheries Cooperative Management Act (1993) and the Interstate Fishery Management Program Charter (1995). In August 2011, the Management Board approved the Omnibus Amendment for Spot, Spotted Seatrout, and Spanish Mackerel. This Amendment did not set specific management measures for spot but it did align management of the species with the requirements of ACFCMA.

In August 2014, the Board approved <u>Addendum II to the Omnibus Amendment</u>. The Addendum establishes use of a Traffic Light Analysis (TLA) to evaluate fisheries trends and develop state-

specified management actions (e.g., bag limits, size restrictions, time and area closures, and gear restrictions) when harvest and abundance thresholds are exceeded.

In February 2020, the Board approved <u>Addendum III to the Omnibus Amendment</u>, which revised the TLA's trigger mechanism and management responses for the recreational and commercial fisheries. Under Addendum III, management action is triggered if harvest and abundance thresholds within a regional or coastwide TLA analysis are met or exceeded for any two of the three terminal years. If management action is triggered, the coastwide response includes recreational bag limits and quantifiable measures to achieve percent reductions in commercial harvest. Response requirements vary depending on which threshold is exceeded. Addendum III also defines the mechanism by which triggered management actions may be removed, after abundance characteristics are no longer triggering management action.

#### II. Status of the Stock

A benchmark stock assessment for spot was completed in 2017 but was not recommended for management use by the Peer Review Panel (ASMFC 2017). Therefore, stock status is unknown.

The stock is also monitored annually using the Traffic Light Analysis (TLA), as described below.

#### Traffic Light Analysis

As part of the requirements under the 2011 Omnibus Amendment, for years in-between benchmark stock assessments, the Spot PRT was tasked with conducting annual monitoring analyses. These trigger exercises compared five data sources to the 10<sup>th</sup> percentile of the data sets' time series. If two terminal values of the five data sources (at least one of which must be fishery independent) fell below the 10<sup>th</sup> percentile, the Management Board would be prompted to consider management action.

In August 2014, the Board approved Addendum II to the Omnibus Amendment. The Addendum established the TLA as the new precautionary management framework to evaluate fishery trends and develop management actions. The TLA framework replaces the management trigger stipulated in the Omnibus Amendment after concern that the triggers were limited in their ability to illustrate long-term declines or increases in stock abundance. In contrast, the TLA is a statistically-robust way to incorporate multiple data sources (both fishery-independent and - dependent) into a single, easily understood metric for management advice. It is an effective method to illustrate long-term trends in the fishery.

The TLA was originally developed as a management tool for data poor fisheries. The name comes from assigning a color (red, yellow, or green) to categorize relative levels of population indicators. When a population characteristic improves, the proportion of green in the given year increases. Harvest and abundance thresholds of 30% and 60% red were established in Addendum II, representing moderate and significant concern for the fishery. If thresholds for both adult population characteristics achieve or exceed a threshold for two out of the most recent three years, then management action is enacted. Under recently approved Addendum

III, management action will be triggered if harvest and abundance thresholds within a regional or coastwide TLA analysis are met or exceeded for any two of the three terminal years. Management measures were triggered at the 30% threshold after reviewing the 2020 TLA (2019 terminal year).

# III. Status of the Fishery

Total landings of spot in 2021 are estimated at 7.1 million pounds, a decrease from 2020 (8.4 million pounds) and below the 10 year average of 8.4 million pounds (Tables 1 and 2). The recreational fishery harvested more than the commercial fishery (71% and 29% respectively, by pounds). Although historical harvests were more evenly split between sectors, since 2005 harvests have been heavily recreational (roughly 30% commercial and 70% recreational, by pounds).

From 1950-2021, commercial spot landings have ranged between 632,950 pounds in 2016 and 14.52 million pounds in 1952 (Figure 1). In 2021, 2.0 million pounds were harvested commercially. Virginia landed approximately 64% of the commercial harvest in 2021, followed by North Carolina with 26% (Table 1). Spot are a major component of Atlantic coast scrap landings (NCDMF 2001). A scrap fishery is one in which fish species that are unmarketable as food, due to size or palatability, are sold unsorted, usually as bait. The majority of estimated removals for spot come from the South Atlantic shrimp trawl fishery discards (ASMFC 2017).

The recreational harvest of spot along the Atlantic coast from 1981 to 2021 has varied between 12.8 million fish in 2018 and 54.4 million fish in 1985 (or 3.3 and 17.3 million pounds; Figures 1 and 2). Recreational harvest has fluctuated widely throughout the time series. Harvest has generally declined from the most recent peak in 2014, with the time series low harvest occurring in 2018. In 2021, recreational landings were 18.9 million fish (5.1 million pounds), a decrease of approximately 1.6 million fish from 2020 (Tables 2 and 3). Anglers in Virginia harvested 66% of the coastwide number of fish in 2021, followed by anglers in Maryland (21%). Many anglers are known to catch spot to use as bait, as well as for other recreational purposes. The estimated number of spot released annually by recreational anglers has varied between 4.7 and 30.4 million fish, with 2021 releases estimated at 15.0 million fish, a 1.5 million fish increase from 2020. Releases have been increasing annually since a low in 2018 (Figure 2, Table 4).

# IV. Status of Assessment Advice

A benchmark stock assessment for spot was completed in 2017 but was not recommended by the Peer Review Panel for management use because of uncertainty in biomass estimates due to conflicting signals among abundance indices and catch time series, as well as sensitivity of model results to assumptions and model inputs (ASMFC 2017). The Review Panel recommended continued annual monitoring of spot through the TLA, with incorporation of

shrimp trawl discard estimates, and another benchmark assessment in 2024. The new benchmark stock assessment is scheduled to begin early 2023, with a terminal year of 2022.

# V. Status of Research and Monitoring

There are no research or monitoring programs required of the states except for the submission of an annual compliance report. Catch and effort data are collected by the commercial and recreational statistics programs conducted by the states and the National Marine Fisheries Service (NMFS). Biological characterization data from fishery landings are also available from several states. Specifically, age data are now available from Maryland, Virginia, North Carolina, and South Carolina. Recruitment indices are available from surveys in Delaware, Maryland, Virginia, North Carolina, and South Carolina. Adult or aggregate (mix of juvenile and older spot) relative abundance indices are available from New Jersey, Delaware, Maryland, North Carolina, South Carolina, Georgia, and the Southeast Area Monitoring and Assessment Program (SEAMAP) (covering North Carolina through Florida). These surveys, in addition to the Northeast Fisheries Science Center (NEFSC) Bottom Trawl Survey, the Northeast Area Monitoring and Assessment Program (NEAMAP), the Chesapeake Bay Multispecies Monitoring and Assessment Program (ChesMMAP), which is still undergoing calibration efforts, and the Chesapeake Bay Fishery-Independent Multispecies Survey (CHESFIMS), collect a variety of biological data elements. Many of these surveys were either suspended or interrupted in 2020, and to a lesser extent in 2021, due to the COVID-19 pandemic.

# Traffic Light Analysis

The TLA harvest metric uses commercial and recreational harvest, both of which were available for 2021, although the pandemic impacted harvest and monitoring programs. The Mid-Atlantic abundance index is based on the ChesMMAP, which was not available from 2019-2021 due to lack of calibration factors, and the NEFSC Multispecies Bottom Trawl Survey which did not sample in 2020, but was available in 2021. The South Atlantic abundance index is based on the SEAMAP which did not sample in 2020 and spring 2021, and the NC P195 Pamlico Sound Survey, which did sample in 2020 and 2021 under restricted conditions. Therefore, the harvest metric for both regions was calculated for 2021, but both the Mid-Atlantic and South Atlantic abundance composite metrics are incomplete for 2021.

The Mid-Atlantic harvest metric did not exceed the red threshold at 30% in two of the three terminal years in 2021 (Figure 3) and the South Atlantic harvest metric has triggered at 30% red in all three the terminal years (2019-2021; Figure 4). The harvest metrics in 2021 in both regions cannot be used as a trigger mechanism since they represent a year with catch restrictions in place.

The abundance composite metrics are unknown for the Mid-Atlantic and South Atlantic due to missing data, and so it could not be determined if further management would be triggered. The Mid-Atlantic abundance composite could only be calculated up to 2018, the last year ChesMMAP data is currently available (Figure 5). In the South Atlantic, survey data for two of

the three terminal years were not available and therefore it is unknown if this metric triggered (Figure 6).

Addendum III requires management action triggered in 2020 to remain in place for a minimum of two years (through and including the 2021 and 2022 seasons). The continued impacts of missing data make evaluating the effects of the 2021 management actions difficult. However, the fishery independent indices that were available were examined for any concerning trends. The NEFSC survey, used for the Mid-Atlantic, shows increasing spot abundance in the past few years and no red proportions in the last five years (Figure 7). When the Mid-Atlantic abundance composite was generated using the NEFSC survey and NEAMAP in place of ChesMMAP, there was no red in any of the last three years (Figure 8). In the South Atlantic, the NCDMF P195 survey exceeded the 30% threshold only once in the last three years (Figure 9). Therefore, the TC recommended that the restrictions that were put into place in 2021 remain in place for at least another year and to wait to evaluate their effects until 2023 when it is anticipated all survey data will be available again.

Further information on the results of the TLA can be found in the <u>2022 Traffic Light Analysis</u> <u>Report for Spot for the 2021 Fishing Year</u>.

# VI. Status of Management Measures and Issues

The FMP for spot identified two management measures for implementation: 1) promote the development and use of bycatch reduction devices through demonstration and application in trawl fisheries, and 2) promote increases in spot yield per recruit by delaying their entry into the fishery until age one or older.

Considerable progress has been made in developing bycatch reduction devices (BRDs) and evaluating their effectiveness. Proceedings from a 1993 spot and Atlantic croaker workshop summarized much of the experimental work on bycatch reduction, and many states have conducted subsequent testing. For example, North Carolina Division of Marine Fisheries (NCDMF) conducted research on the four main gear types (shrimp trawl, flynet, long haul seine, and pound net) responsible for the bulk of the scrap fish landings in order to reduce the catch of small fish. State testing of shrimp trawl BRDs achieved finfish reductions of 50-70% with little loss of shrimp, although total bycatch numbers relative to shrimp fishery effort are still unknown. The Virginia Marine Resources Commission investigated the use of culling panels in pound nets and long haul seines to release small Atlantic croaker, spot, and weakfish. The Potomac River Fisheries Commission (PRFC) also investigated the use of culling panels in pound nets, finding that the panels allowed the release of 42% of captured spot less than eight inches in length (Hager 2001).

Following favorable testing, devices have been made mandatory or recommended in several state fisheries. The use of BRDs is required in all penaeid shrimp trawl fisheries in the South Atlantic. The PRFC recommends the use of culling panels in pound nets and allows those nets with panels to keep one bushel of bycatch of flounder and weakfish. In North Carolina, escapement panels have been required in the bunt nets of long haul seines in an area south

and west of Bluff Shoals in the Pamlico Sound since April 1999. However, evaluation of the beneficial effects of BRDs to spot stocks continues to need further study.

General gear restrictions, such as minimum mesh sizes or area trawling bans, have helped protect some age classes of spot. Florida banned the use of entangling nets in nearshore and inshore waters in 1995. Georgia banned the use of gillnets (except for shad fishing) in 1957 and banned trawling in the sounds in 1990. Some states had implemented creel limits to regulate harvest prior to 2021. Georgia has had a 25-fish spot creel limit (both recreational and commercial, except for shrimp trawlers). South Carolina has an aggregate bag limit (50 fish) for hook and line fishing of spot, Atlantic croaker, and kingfish/whiting (*Menticirrhus* sp.).

Please see the below section "Recent Changes in State Regulations" for more information on the management measures that were put into place in 2021 after management action was triggered at the 30% threshold in the 2020 TLA.

# **Omnibus Amendment (Interstate)**

In August 2011, the Management Board approved the development of an amendment to the Spot FMP to address three issues: compliance measures, consistency with federal management in the exclusive economic zone, and alignment with Commission standards. The updated FMP's objectives are to: (1.) Increase the level of research and monitoring on spot bycatch in other fisheries, in order to complete a coastwide stock assessment (2.) Manage the spot fishery stock to maintain the spawning stock biomass above the target biomass levels. (3.) Develop research priorities that will further refine the spot management program to maximize the biological, social, and economic benefits derived from the spot population. The Omnibus Amendment does not require specific fishery management measures in either the recreational or commercial fisheries for states within the management unit.

#### Addendum II

In August 2014, the Board approved Addendum II which establishes a new management framework (i.e., Traffic Light Approach) to evaluate fisheries trends and develop state-specified management actions (i.e., bag limits, size restrictions, time & area closures, and gear restrictions) when harvest and abundance thresholds are exceeded over two years. Management measures would remain in place for two years.

#### Addendum III

In February 2020, the Board approved Addendum III, which revises the TLA and requires coastwide management action if harvest and abundance thresholds are exceeded in two of the

three most recent years. Management measures would remain in place for a minimum of two years and until abundance characteristics are no longer triggering management action.

# **Recent Changes in State Regulations**

Due to the triggering of the 2020 TLA at the moderate 30% threshold, non *de minimis* states were required to implement a 50-fish recreational bag limit and implement commercial regulations that would have reduced the average 10 year commercial harvest by 1%. New regulations were required to be in place by the end of 2021. A summary of spot regulations that were implemented as of January 1, 2022 can be found in Table 5.

#### De minimis Guidelines

A state qualifies for *de minimis* status if its past 3-years' average of the combined commercial and recreational catch is less than 1% of the past 3-years' average of the coastwide combined commercial and recreational catch. Those states that qualify for *de minimis* are not required to implement any monitoring requirements, none of which are included in the plan, and are not required to implement TLA triggered regulations outlined in Addendum III.

#### VII. De Minimis Requests

New Jersey, Delaware, and Georgia request *de minimis* status. New Jersey and Georgia meet the requirements, while Delaware exceeds 1% for the second year in a row with 1.2% of the 3-year coastwide average. Delaware has historically been *de minimis* and its exceedance in 2021 was minimal. The 3-year average of combined commercial and recreational harvest in Delaware is inflated by unusually high harvest in 2019. This year will no longer be included in the 3-year average of harvest starting next year, which may cause Delaware to fall below the 1% threshold. The PRT agreed to recommend *de minimis* status for an additional year to ensure that there is an established fishery. The PRT will continue to monitor the situation and if Delaware exceeds the 1% threshold again next year, they will no longer recommend *de minimis* status for this state. The PRT recommends that the Board approve the *de minimis* requests from New Jersey, Delaware, and Georgia.

# VIII. Implementation of FMP Compliance Requirements for 2021

All states within the management unit have submitted compliance reports for the 2021 fishing year. The PRT found no compliance issues.

# IX. Recommendations of the Plan Review Team

Following the next assessment or when a new management document is initiated, whichever comes first, the PRT recommends that the Board consider changing the *de minimis* process and criteria for spot following the procedures in the recently approved ASMFC *De Minimis* Policy. The PRT would like to see separate commercial and recreational *de minimis* measures in place, rather than the combined recreational and commercial *de minimis* criteria. A change here will not only

mirror Atlantic croaker *de minimis* structure, but provide more state flexibility for managing their commercial and recreational fisheries.

# Research and Monitoring Recommendations

Additional research recommendations can be found in the most recent stock assessment peer review report found <u>here</u>. The PRT had the additional research recommendations:

- Expand collection of life history data (age, growth, and reproduction data) from fishery dependent sources while maintaining these collections from ongoing state level fishery independent sources as well as multistate monitoring surveys. In addition, investigate identification of coastal stocks and their movement through tagging and genetic studies.
- Increase efforts to characterize commercial discards through expanded observer coverage, particularly within the shrimp trawl fishery, and develop a standardized bycatch protocol with collection of lengths and ages of discards and by-catch. Other sources for discard mortality studies include scrap and bait fisheries, commercial gears and recreational gear, and direct research and engagement of commercial harvesters.
- Investigate environmental impacts of temperature shifts, climate change, and large scale oceanic cycles (e.g., Atlantic Multi-decadal Oscillation [AMO] and El Nino Southern Oscillation [El Nino]) on recruitment, SSB, stock distribution and maturity schedules for incorporation into stock assessment models.

# X. References

Atlantic States Marine Fisheries Commission (ASMFC). 1987. Fishery Management Plan for Spot. Washington (DC): ASMFC. Fisheries Management Report #11. 90 p.

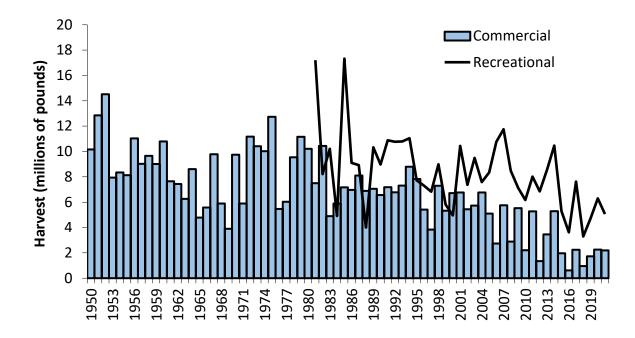
ASMFC. 2017. <u>Spot Stock Assessment Peer Review Report</u>. ASMFC, Stock Assessment Peer Review Report, 12 p.

Hager, C. 2001. Efficiency of haul-seine cull panels: A comparison of size selectivity and relative release second season. Fishery Resource Grant FRG 2000-06. Virginia Institute of Marine Science, William & Mary. <u>https://scholarworks.wm.edu/reports/2220</u>

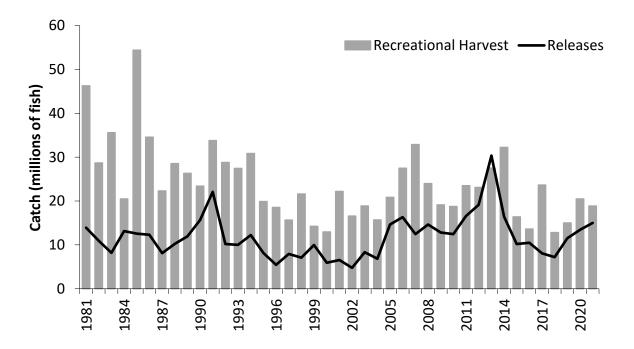
Kline LL, Speir H (editors). 1993. Proceedings of a Workshop on Spot (*Leiostomus xanthurus*) and Atlantic Croaker (*Micropogonias undulatus*). Washington (DC): Atlantic States Marine Fisheries Commission. Special Report #25. 175 p.

North Carolina Division of Marine Fisheries (NCDMF). 2001. Assessment of North Carolina commercial finfisheries, 1997–2000. Final Report, North Carolina Department of Environment and Natural Resources, Division of Marine Fisheries, Award Number NA 76 FI 0286, 1-3.

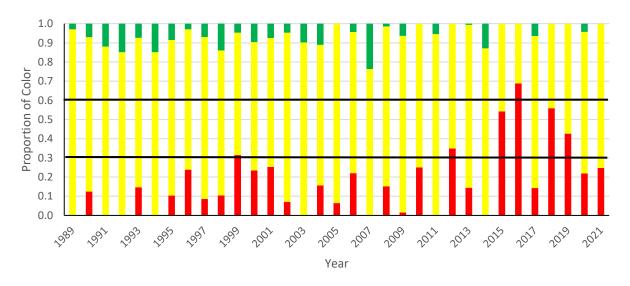
Spot Plan Review Team (PRT). 2012. Spot Data Availability and Stock Monitoring Report. 2009. Washington (DC): Atlantic States Marine Fisheries Commission. Report to the South Atlantic State-Federal Fisheries Management Board. 85 p.



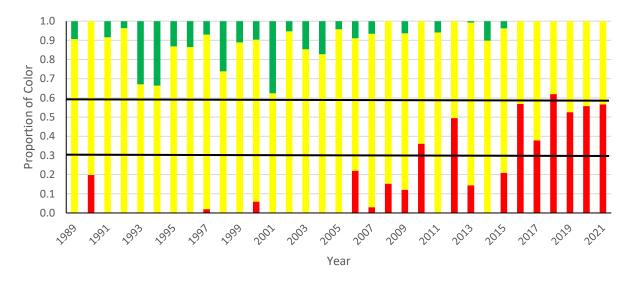
**Figure 1.** Spot commercial and recreational landings (millions of pounds), 1950-2021. (Recreational landings available from 1981-present; see Tables 1 and 2 for state-by-state values from 2012-2021 and data sources).



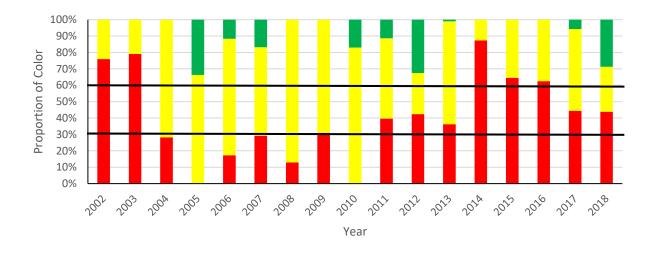
**Figure 2.** Spot recreational harvest and releases (millions of fish), 1981-2021. (See Tables 3 and 4 for state-by-state values from 2012-2021 and data sources).



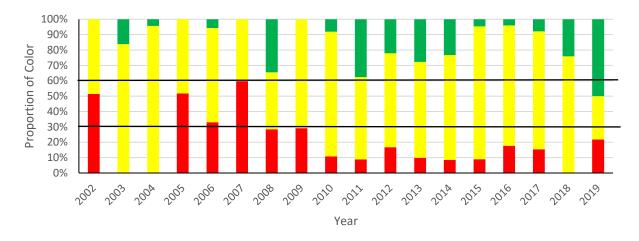
**Figure 3.** Annual color proportions for the Mid-Atlantic (NJ-VA) harvest composite for spot from the 2021 Traffic Light Analysis using a 2002-2012 reference period.



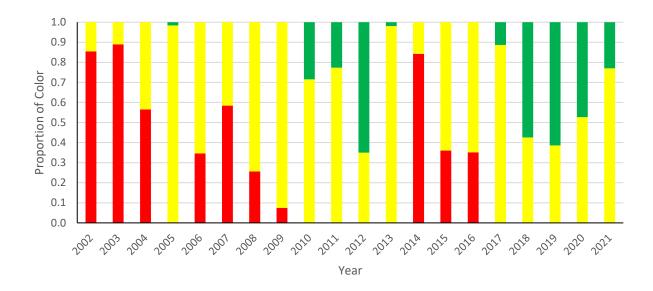
**Figure 4.** Annual color proportions for the South Atlantic (NC-FL) harvest composite for spot from the 2021 Traffic Light Analysis using a 2002-2012 reference period.



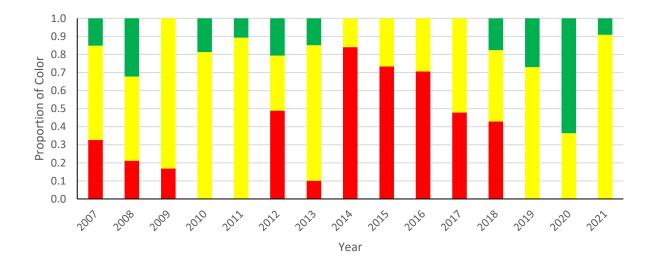
**Figure 5.** Adult (age 1+) spot TLA composite characteristic index for the Mid-Atlantic (NEFSC and ChesMMAP) (No 2019, 2020, and 2021 data points due to ongoing ChesMMAP recalibration) using a 2002-2012 reference period.



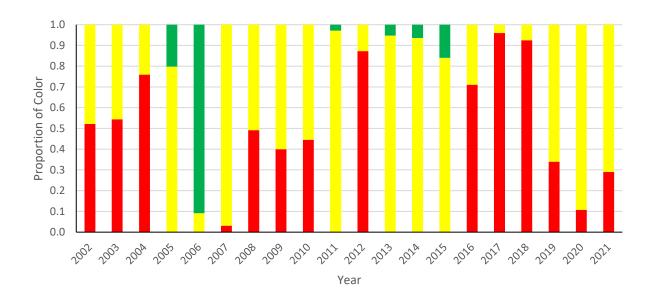
**Figure 6.** Annual TLA composite characteristic for adult spot (age 1+) in the South Atlantic (SEAMAP and NCDMF Program 195) using a 2002-2012 reference period. (No 2020 and 2021 data points due to no SEAMAP spring cruise in those years).



**Figure 7.** Annual TLA color proportions for adult spot (age 1+) from Mid-Atlantic NEFSC fall groundfish trawl survey from 2002-2021 using a 2002-2012 reference period.



**Figure 8.** Adult spot (age 1+) TLA composite characteristic index for Mid-Atlantic (NJ-VA) using NEFSC and NEAMAP surveys from 2007-2021 with a 2007-2019 reference period.



**Figure 9.** Annual TLA color proportions for adult spot (age 1+) from the South Atlantic NCDMF Program 195 Survey from 2002-2021 using a 2002-2012 reference period.

#### XII. Tables

**Table 1.** Commercial landings (pounds) of spot by state 2012-2021. (Source: ACCSP for 2020 and earlier for all jurisdictions, except PRFC; annual compliance reports for 2021 and for all PRFC years. "C" values are confidential. Total values adhere to the ACCSP rule of 3, i.e. totals are reflective of the true total if 0 or at least 3 states' data are confidential in a given year. Otherwise, they are sums of non-confidential data.)

Year	N of NJ	NJ	DE	MD	PRFC	VA
2012	95,850	9,935	С	99,456	14,563	600,351
2013	179,980	48,324	С	335,462	41,286	2,044,538
2014	С	29,683	С	348,435	148,908	3,843,869
2015	1,600	86	С	96,102	86,972	1,369,520
2016	1,880	26	С	18,105	8,480	266,859
2017	12,269	2,418	С	117,279	41,748	1,596,523
2018	4,696	10,809	С	58 <i>,</i> 480	41,747	558,932
2019	22,976	С	С	33,043	С	1,094,523
2020	684	25,882	С	73,669	С	1,512,946
2021	14,646	С	С	50,033	37,503	1,293,353
	-			-	-	
	NC	SC	GA	FL		Total
2012	<b>NC</b> 489,678	<b>SC</b> 541	<b>GA</b> 0	<b>FL</b> 36,744		<b>Total</b> 1,345,459
2012 2013						
	489,678	541	0	36,744		1,345,459
2013	489,678 768,592	541 2,446	0 0	36,744 31,368		1,345,459 3,451,995
2013 2014	489,678 768,592 766,224	541 2,446 5,917	0 0 C	36,744 31,368 16,742		1,345,459 3,451,995 5,281,330
2013 2014 2015	489,678 768,592 766,224 376,979	541 2,446 5,917 1,619	0 0 C 0	36,744 31,368 16,742 27,969		1,345,459 3,451,995 5,281,330 1,963,850
2013 2014 2015 2016	489,678 768,592 766,224 376,979 241,044	541 2,446 5,917 1,619 1,059	0 0 C 0 0	36,744 31,368 16,742 27,969 82,875		1,345,459 3,451,995 5,281,330 1,963,850 617,288
2013 2014 2015 2016 2017	489,678 768,592 766,224 376,979 241,044 415,465	541 2,446 5,917 1,619 1,059 3,200	0 0 C 0 0 0	36,744 31,368 16,742 27,969 82,875 47,304		1,345,459 3,451,995 5,281,330 1,963,850 617,288 2,237,922
2013 2014 2015 2016 2017 2018	489,678 768,592 766,224 376,979 241,044 415,465 167,696	541 2,446 5,917 1,619 1,059 3,200 4,514	0 0 C 0 0 0 0	36,744 31,368 16,742 27,969 82,875 47,304 68,864		1,345,459 3,451,995 5,281,330 1,963,850 617,288 2,237,922 960,299

**Table 2.** Recreational harvest (pounds) of spot by state, 2012-2021. (Source: MRIP for 2020 and earlier and annual compliance reports for 2021. Data dating back to 1981 are available upon request to the NMFS Fisheries Statistics Division.)

Year	N of NJ	NJ	DE	MD	VA
2012	121,071	544,509	80,962	755,265	3,091,344
2013	18,889	423,887	244,253	720,315	3,443,742
2014	0	27,847	352,714	1,465,861	4,322,812
2015	0	0	30,693	469,462	551,389
2016	0	678	9,606	278,994	1,211,694
2017	0	1,064	340	1,086,667	5,019,896
2018	8,054	45,879	23,968	327,930	1,753,064
2019	3,719	13,451	72,556	809,736	2,283,558
2020	1,000	450	19,392	1,019,065	4,589,353
2021	0	19,765	54,021	1,071,972	3,231,201
			-		
	NC	SC	GA	FL	Total
2012	<b>NC</b> 760,276	<b>SC</b> 1,332,541	<b>GA</b> 305		<b>Total</b> 6,851,796
2012 2013				FL	
	760,276	1,332,541	305	<b>FL</b> 165,523	6,851,796
2013	760,276 1,789,251	1,332,541 1,708,520	305 10,525	<b>FL</b> 165,523 213,949	6,851,796 8,573,331
2013 2014	760,276 1,789,251 2,877,483	1,332,541 1,708,520 415,937	305 10,525 15,371	<b>FL</b> 165,523 213,949 992,221	6,851,796 8,573,331 10,470,246
2013 2014 2015	760,276 1,789,251 2,877,483 833,390	1,332,541 1,708,520 415,937 2,539,187	305 10,525 15,371 2,573	FL 165,523 213,949 992,221 861,523	6,851,796 8,573,331 10,470,246 5,288,217
2013 2014 2015 2016	760,276 1,789,251 2,877,483 833,390 558,799	1,332,541 1,708,520 415,937 2,539,187 1,437,534	305 10,525 15,371 2,573 20,727	FL 165,523 213,949 992,221 861,523 102,356	6,851,796 8,573,331 10,470,246 5,288,217 3,620,388
2013 2014 2015 2016 2017	760,276 1,789,251 2,877,483 833,390 558,799 909,796	1,332,541 1,708,520 415,937 2,539,187 1,437,534 522,645	305 10,525 15,371 2,573 20,727 8,282	FL 165,523 213,949 992,221 861,523 102,356 76,502	6,851,796 8,573,331 10,470,246 5,288,217 3,620,388 7,625,192
2013 2014 2015 2016 2017 2018	760,276 1,789,251 2,877,483 833,390 558,799 909,796 597,511	1,332,541 1,708,520 415,937 2,539,187 1,437,534 522,645 272,501	305 10,525 15,371 2,573 20,727 8,282 5,481	FL   165,523   213,949   992,221   861,523   102,356   76,502   257,594	6,851,796 8,573,331 10,470,246 5,288,217 3,620,388 7,625,192 3,291,982

**Table 3.** Recreational harvest (numbers) of spot by state, 2012-2021. (Source: MRIP for 2020 and earlier and annual compliance reports for 2021. Data dating back to 1981 are available upon request to the NMFS Fisheries Statistics Division.)

Year	N of NJ	NJ	DE	MD	VA
2012	168,109	2,189,239	213,687	2,120,554	10,147,723
2013	51,903	1,177,944	581,699	2,456,346	11,733,669
2014	0	54,853	590,613	4,396,291	13,652,625
2015	0	0	90,796	1,352,278	1,731,063
2016	0	2,052	29,700	1,145,272	5,279,153
2017	0	2,412	1,057	3,250,553	15,944,413
2018	39,083	106,332	70,390	1,209,971	7,360,908
2019	17,517	108,765	220,296	2,643,233	7,647,077
2020	6 <i>,</i> 046	2,133	58 <i>,</i> 294	3,640,484	14,963,420
2021	0	72,091	195,688	4,037,517	12,486,597
	NC	SC	GA	FL	Total
2012	<b>NC</b> 2,677,082	<b>SC</b> 5,003,162	<b>GA</b> 1,230	<b>FL</b> 590,701	<b>Total</b> 23,111,487
2012 2013					
	2,677,082	5,003,162	1,230	590,701	23,111,487
2013	2,677,082 6,120,985	5,003,162 4,704,723	1,230 41,546	590,701 660,760	23,111,487 27,529,575
2013 2014	2,677,082 6,120,985 8,343,467	5,003,162 4,704,723 1,258,300	1,230 41,546 68,852	590,701 660,760 3,847,994	23,111,487 27,529,575 32,212,995
2013 2014 2015	2,677,082 6,120,985 8,343,467 2,572,738	5,003,162 4,704,723 1,258,300 7,538,334	1,230 41,546 68,852 8,489	590,701 660,760 3,847,994 3,081,786	23,111,487 27,529,575 32,212,995 16,375,484
2013 2014 2015 2016	2,677,082 6,120,985 8,343,467 2,572,738 1,928,716	5,003,162 4,704,723 1,258,300 7,538,334 4,974,300	1,230 41,546 68,852 8,489 61,252	590,701 660,760 3,847,994 3,081,786 203,651	23,111,487 27,529,575 32,212,995 16,375,484 13,624,096
2013 2014 2015 2016 2017	2,677,082 6,120,985 8,343,467 2,572,738 1,928,716 2,418,331	5,003,162 4,704,723 1,258,300 7,538,334 4,974,300 1,897,506	1,230 41,546 68,852 8,489 61,252 19,789	590,701 660,760 3,847,994 3,081,786 203,651 100,975	23,111,487 27,529,575 32,212,995 16,375,484 13,624,096 23,635,036
2013 2014 2015 2016 2017 2018	2,677,082 6,120,985 8,343,467 2,572,738 1,928,716 2,418,331 2,068,865	5,003,162 4,704,723 1,258,300 7,538,334 4,974,300 1,897,506 895,830	1,230 41,546 68,852 8,489 61,252 19,789 15,553	590,701 660,760 3,847,994 3,081,786 203,651 100,975 1,039,402	23,111,487 27,529,575 32,212,995 16,375,484 13,624,096 23,635,036 12,806,334

**Table 4.** Recreational releases (numbers) of spot by state, 2012-2021. (Source: MRIP for 2020 and earlier and annual compliance reports for 2021. Data dating back to 1981 are available upon request to the NMFS Fisheries Statistics Division.)

Year	N of NJ	NJ	DE	MD	VA
2012	237,028	1810472	184,949	3,291,874	6,371,367
2013	2,203	2,737,742	537,632	7,620,695	7,549,286
2014	0	34,941	237,395	2,206,814	4,125,116
2015	1,585	167,129	38,523	642,459	1,896,698
2016	0	2,705	16,620	713,418	2,858,405
2017	150	15,321	11,768	2,280,482	3,335,800
2018	15 <i>,</i> 467	37,739	69,619	943 <i>,</i> 468	3,043,068
2019	23	21,801	125,656	3,311,565	4,509,930
2020	0	36,591	235,832	5,560,590	5,156,762
2021	592	365,908	221,027	6,529,999	3,526,780
	NC	SC	GA	FL	Total
2012	<b>NC</b> 2,995,879	<b>SC</b> 673,292	<b>GA</b> 10,110	<b>FL</b> 3,571,066	<b>Total</b> 19,146,037
2012 2013					
	2,995,879	673,292	10,110	3,571,066	19,146,037
2013	2,995,879 5,513,732	673,292 5,891,165	10,110 32,719	3,571,066 466,583	19,146,037 30,351,757
2013 2014	2,995,879 5,513,732 4,043,710	673,292 5,891,165 1,908,552	10,110 32,719 74,795	3,571,066 466,583 3,781,382	19,146,037 30,351,757 16,412,705
2013 2014 2015	2,995,879 5,513,732 4,043,710 2,984,629	673,292 5,891,165 1,908,552 2,818,378	10,110 32,719 74,795 220,253	3,571,066 466,583 3,781,382 1,409,895	19,146,037 30,351,757 16,412,705 10,179,549
2013 2014 2015 2016	2,995,879 5,513,732 4,043,710 2,984,629 1,831,415	673,292 5,891,165 1,908,552 2,818,378 3,421,589	10,110 32,719 74,795 220,253 335,695	3,571,066 466,583 3,781,382 1,409,895 1,296,190	19,146,037 30,351,757 16,412,705 10,179,549 10,476,037
2013 2014 2015 2016 2017	2,995,879 5,513,732 4,043,710 2,984,629 1,831,415 1,902,281	673,292 5,891,165 1,908,552 2,818,378 3,421,589 368,988	10,110 32,719 74,795 220,253 335,695 86,668	3,571,066 466,583 3,781,382 1,409,895 1,296,190 79,660	19,146,037 30,351,757 16,412,705 10,179,549 10,476,037 8,081,118
2013 2014 2015 2016 2017 2018	2,995,879 5,513,732 4,043,710 2,984,629 1,831,415 1,902,281 2,062,163	673,292 5,891,165 1,908,552 2,818,378 3,421,589 368,988 315,406	10,110 32,719 74,795 220,253 335,695 86,668 70,598	3,571,066 466,583 3,781,382 1,409,895 1,296,190 79,660 649,404	19,146,037 30,351,757 16,412,705 10,179,549 10,476,037 8,081,118 7,206,932

**Table 5.** Summary of state regulations for spot in 2021, unless otherwise stated. For states that implemented regulations in 2021, the date those regulations became effective is given.

State	Recreational	Commercial
NJ	None	None
DE	None	None
MD	50 fish/day, with additional charter live bait allowance (effective 6/14/21)	Open 4/10 to 11/24 (effective 6/14/21)
PRFC	50 fish/day (effective 1/1/22)	Open 1/1 to 10/28 (effective 1/1/22)
VA	50 fish/day, with additional charter live bait allowance (effective 4/15/21)	Open 4/15 to 12/8 (effective 4/15/21)
NC	50 fish/day (effective 4/15/21), recreational use of commercial gears with license and gear restrictions	Open 4/5 to 12/9 (effective 4/15/21)
SC	Mandatory for-hire logbooks, small Sciaenidae species aggregate bag limit of 50 fish/day	Small Sciaenidae species aggregate bag limit of 50 fish/day
GA	25 fish/day	25 fish/day limit except for trawlers harvesting shrimp for human consumption (no limit)
FL	50 fish/day (effective 12/1/21)	2,200 lbs vessel limit (effective 12/1/21)