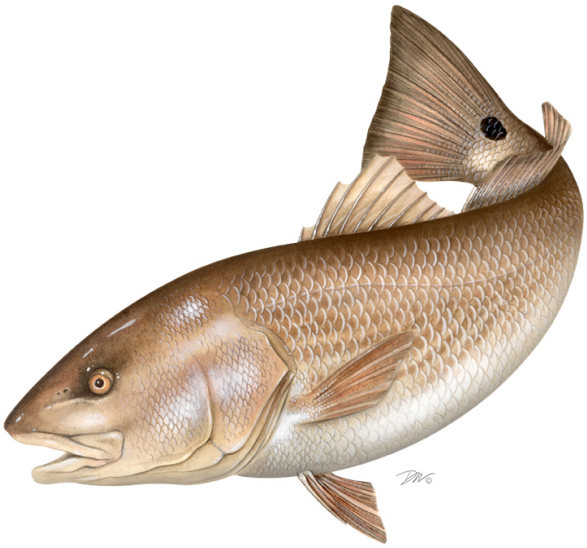
ATLANTIC STATES MARINE FISHERIES COMMISSION

REVIEW OF THE INTERSTATE FISHERY MANAGEMENT PLAN

FOR

RED DRUM
(*Sciaenops ocellatus*)

2020 FISHING YEAR



Prepared by the Plan Review Team
Approved August 2021

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

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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 that 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 a 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 that all harvest would take place in state waters, the Council FMP recommended that 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 a 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 a 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; a 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 2020.

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 2017 Red Drum Stock Assessment and Peer Review Report indicate overfishing is not occurring for either the northern or southern stock of red drum (ASMFC 2017). The assessment was unable to determine an overfished/not overfished status because population abundance could not be reliably estimated due to limited data for the older fish (ages 4+). Currently, a simulation assessment is ongoing, with a planned benchmark assessment to follow; all work will be completed in 2024.

Northern Region (NJ-NC)

Recruitment (age 1 abundance) has varied annually with a large peak occurring in 2012 (Figure 1). The trend in the three-year average sSPR indicates low sSPR early in the time series with increases during 1991 – 1997 and fluctuations thereafter (Figure 2). The average sSPR has been above the overfishing threshold ($F_{30\%}$) since 1994, and at or above the target ($F_{40\%}$) since 1996, except during one year (2002). Fishing pressure and mortality appear to be stabilized near the target fishing mortality. The average sSPR is also likely above the target benchmark.

Southern Region (SC-FL)

Recruitment (age 1 abundance) has fluctuated without apparent trend since 1991 (Figure 1). A high level of uncertainty exists around the three-year average sSPR estimates for the southern region. While the 3-year average sSPR estimate in 2013 was above both the target ($F_{40\%}$) and the overfishing threshold ($F_{30\%}$), indicating that overfishing is not occurring, the high level of uncertainty around this estimate indicates that this conclusion should be considered with extreme caution (Figure 2).

NOTE: In 2018, the Marine Recreational Information Program (MRIP) transitioned from estimating effort using the Coastal Household Telephone Survey (CHTS) to the mail-based Fishing Effort Survey (FES). The 2017 stock assessment used CHTS data to estimate recreational harvest. However, as red drum is not managed by a quota and to accommodate the transition, recreational harvest estimates based on the FES data or calibration are shown in this report. Due to differing estimation methodologies, these harvest data should not be compared to reference points from the 2017 stock assessment. Harvest estimates based on

either effort survey can be compared at:
https://www.st.nmfs.noaa.gov/st1/recreational/queries/.

III. Status of the Fishery

Red drum landings from New Jersey through the east coast of Florida in 2020 are estimated at 6 million pounds (Tables 3 and 4, Figure 3). In 2020, 56% of the total landings came from the southern region where the fishery is exclusively recreational, and 44% from the northern region (Figure 4). These shifts are a significant change from the 2019 regional landings split, which were 20% from the northern region and 80% from the southern region.

Northern Region (NJ-NC)
Red drum landings in the northern region totaled 2.7 million pounds. This is roughly a 1.7 million increase, or 170%, compared to 2019 landings (Table 2). There was an increase in both commercial and recreational landings. Commercial landings totaled 173,659 or 7% of the combined commercial and recreational harvest in the northern region, with 95% of commercial landings coming from North Carolina (Figure 5). This is a 199% increase in commercial landings from 2019; it is important to note that 2019 landings were the lowest commercial landings on record since 2004. 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 2019/2020 fishing year, North Carolina landed 54,175 pounds of the 250,000 pound annual landings cap.

Recreational landings were estimated to be 2.5 million pounds in the northern region, a 173% increase from 2019 estimates (Table 4). North Carolina is estimated to have 1.8 million pounds of recreational landings, followed by Virginia with 610,000 lbs. The number of fish caught in the recreational fishery was 672,956 fish, up 120% from 2019 (Table 5). The number of fish released was similar to 2019 at 3.6 million fish released in the northern region (Figure 6). It is estimated that 8% of released fish die as a result of being caught, resulting in an estimated 289,611 dead discarded fish in 2020 (Table 6). Recreational removals from the fishery are thus estimated to be 962,000 fish in 2020 (Figure 6 & 7).

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 were estimated to be 3.3 million pounds in the southern region, a 13% decrease from 2019 estimates (Table 4). Florida is estimated to have 2.1 million pounds of recreational landings, followed by South Carolina with 671,000 lbs. The number of fish caught in the recreational fishery was 1 million fish, down 14% from 2019 (Table 4). The number of fish released also declined compared to those in 2019 with 5.3 million fish released in the southern region in 2020 (Figure 6). It is estimated that 8% of released fish die as a result of being caught,

resulting in an estimated 420,234 dead discarded fish in 2020 (Table 6). Recreational removals from the fishery are thus estimated to be 1.5 million fish in 2020 (Figure 6 & 7).

IV. Status of Assessment Advice

Current stock status information comes from the 2017 stock assessment (ASMFC 2017) completed by the ASMFC Red Drum Stock Assessment Subcommittee (SAS) and Technical Committee (TC), peer reviewed by an independent panel of experts through ASMFC's desk review process, and approved by the South Atlantic State-Federal Fisheries Management Board for use in management decisions. Previous interstate management decisions were based on the last coastwide assessment, SEDAR 18 (SAFMC 2009), and prior to 2009, decisions were based on regional assessments conducted by Vaughan and Helser (1990), Vaughan (1992, 1993, 1996), and Vaughan and Carmichael (2000) that reflected the current stock structure, two stocks divided at the North Carolina-South Carolina border. Several states have also conducted state-specific assessments (e.g., Murphy and Munyandorero 2009; Takade and Paramore 2007 [update of Vaughan and Carmichael 2000]).

In 2017, a state-specific stock assessment was completed by South Carolina, which indicated that the South Carolina population of red drum was experiencing overfishing (Murphy 2017). This assessment result prompted new state management regulations, which went into effect on July 1, 2018 (Table 1).

In 2020, Florida completed a stock assessment for red drum in Florida state waters[1], and found that the Atlantic Coast red drum stock was not overfished and overfishing was not occurring. The northeast region (Flagler through Nassau counties) exceeded the Commission's target escapement rate of 40%. The 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 of 40%.

At the Winter meeting of ASMFC in 2019, the management Board reviewed a proposal from the SAS that recommended a population simulation model be developed to simulate the full red drum population. The simulated population would be used to test a variety of assessment modeling techniques to determine which model would be the most applicable for the next benchmark stock assessment. Due to the work and modeling expertise needed for the simulation assessment, the benchmark assessment has be postponed until 2024. The simulation population modeling is scheduled to be completed in 2022.

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

[1] Addis, D. 2020. The 2020 stock assessment of Red Drum, *Sciaenops ocellatus*, in Florida. Florida Fish and Wildlife Conservation Commission Fish and Wildlife Research Institute In-House Report IHR2020-002: 129 p.

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 2018. 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.

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 2020

The PRT found no inconsistences among states with the requirements of Amendment 2 and no inconsistences were found.

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

Additional research recommendations can be found in the most recent stock assessment found here. The PRT had the 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 and expansion 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 on stock density/year class strength. Determine whether natural environmental perturbations 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

Atlantic States Marine Fisheries Commission (ASMFC). 2002. Amendment 2 to the Interstate Fishery Management Plan for Red Drum. ASMFC, Washington, DC, Fishery Management Report No. 38, 141 p.

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Murphy, MD. 2017. An assessment of red drum in South Carolina, 1982-2016. South Carolina Department of Natural Resources Marine Resources Research Institute, In House Report 2017, 46 p.

Murphy, MD and J. Munyandorero. 2009. An assessment of the status of red drum in Florida through 2007. Florida Fish and Wildlife Commission Fish and Wildlife Research Institute, St. Petersburg, In-House Report 2008-008, 106 p.

South Atlantic Fishery Management Council (SAFMC). 2009. Southeast Data, Assessment and Review 18, Stock Assessment Report, Atlantic Red Drum. North Charleston, SC. 544 p.

Takade, H and L Paramore. 2007. Stock Status of the Northern Red Drum Stock. North Carolina Division of Marine Fisheries. In-House Report, 60 p.

Vaughan, DS. 1992. Status of the red drum stock of the Atlantic coast: Stock assessment report for 1991. NOAA Tech. Mem. NMFS-SEFC-297. 58 p.

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Vaughan, DS and JT Carmichael. 2001. Bag and size limit analyses for red drum in northern and southern regions of the U.S. South Atlantic. NOAA Tech. Mem. NMFS-SEFSC-454, 37 p. U.S. DOC, NOAA, Center for Coastal Fisheries and Habitat Research, Beaufort, NC.

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X. Figures

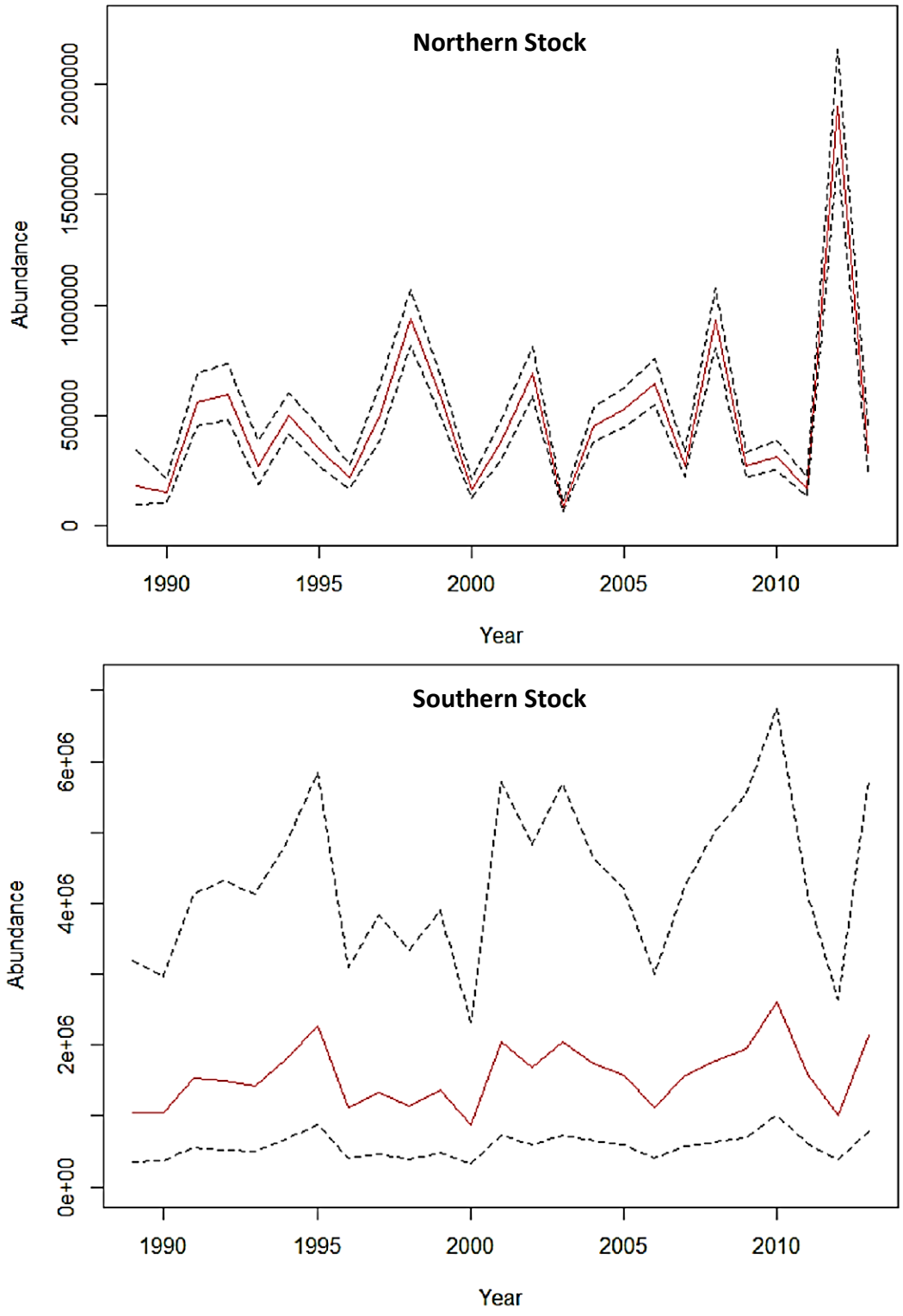

Figure 1. Predicted recruitment (age-1 abundance, red lines) with 95% confidence intervals (dashed black lines) for the northern (top) and southern (bottom) regions (Source: ASMFC 2017).

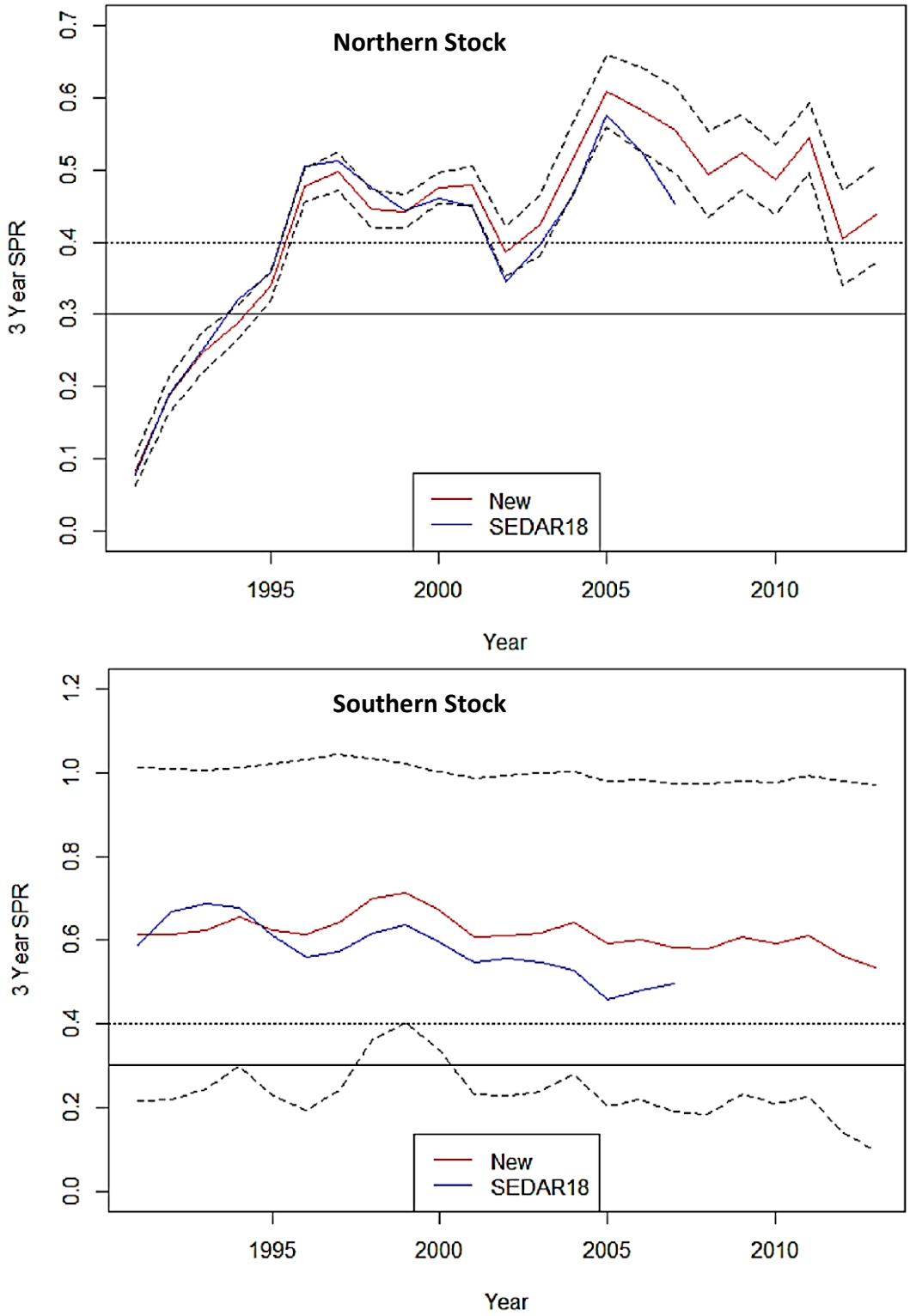

Figure 2. Three year average sSPR (red lines) for the northern (top) and southern (bottom) stocks with 95% confidence intervals (dashed black lines). Point estimates from the previous benchmark assessment (SEDAR18) are included for comparison. The target sSPR (dotted black line) is 40% and the threshold sSPR (solid black line) is 30% (Source: ASMFC 2017)**.**

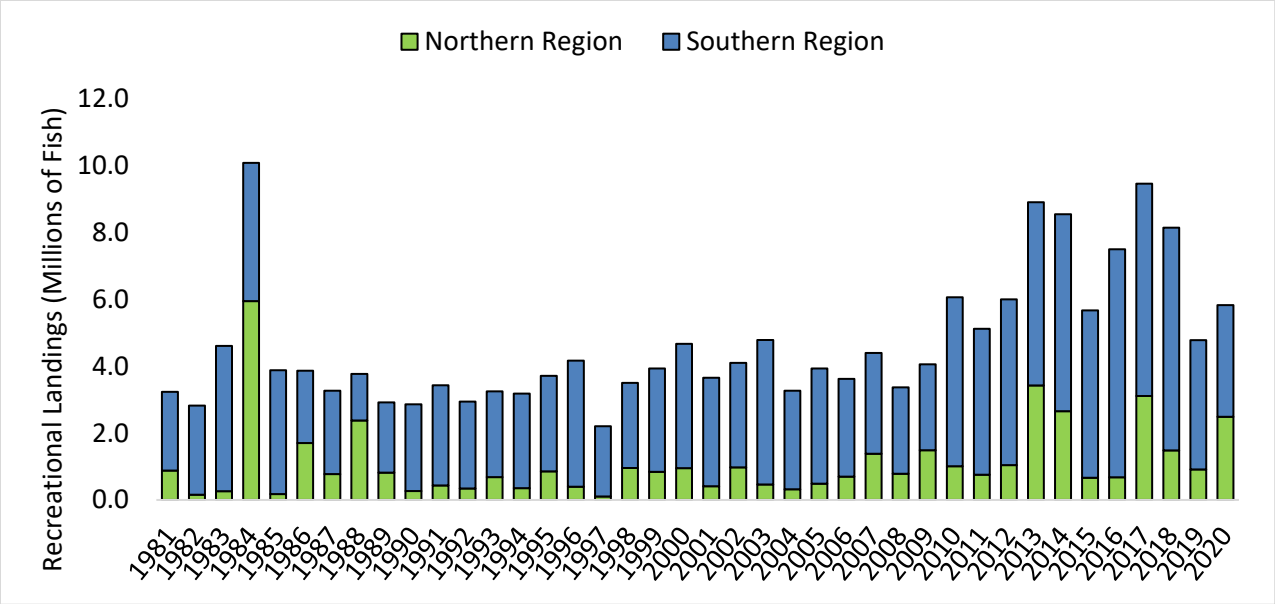

Figure 3. Recreational landings of red drum by region (1981-2020). See Table 3 for values and data sources.

*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.

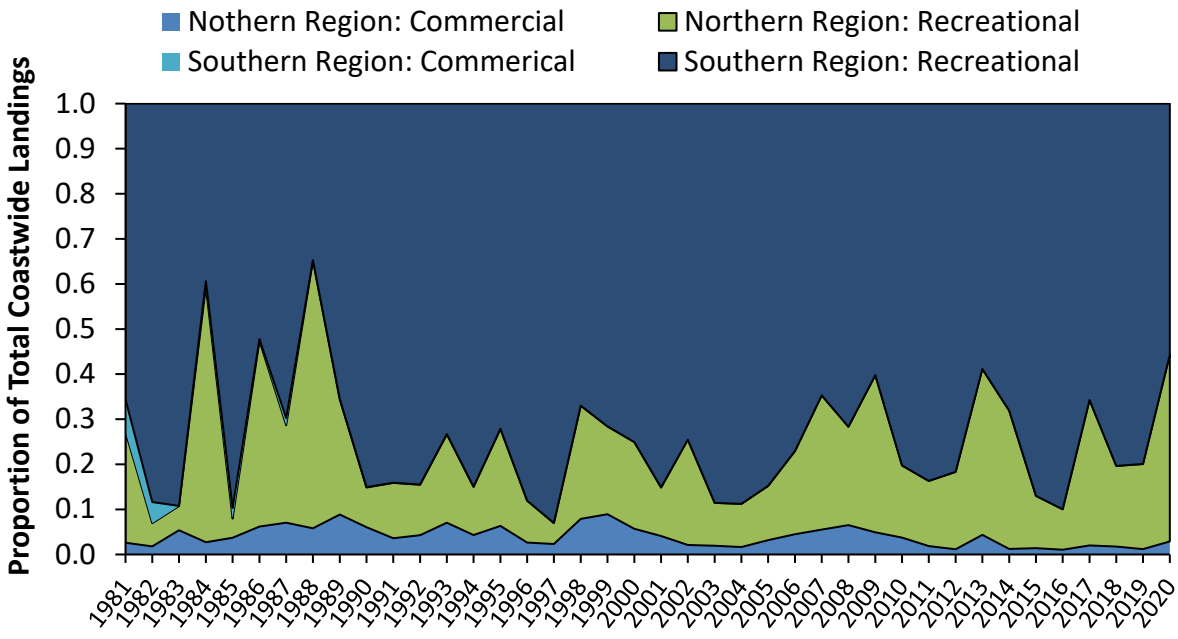

Figure 4. Proportion of regional, sector-specific landings to total coastwide landings (pounds). See Tables 2 and 3 for data sources.

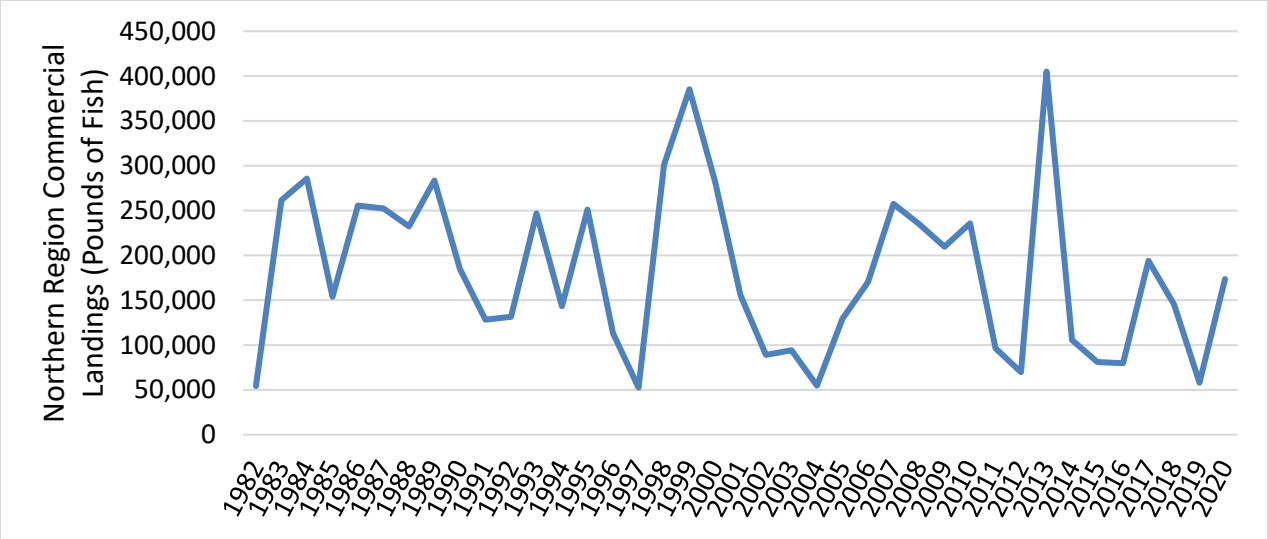

Figure 5. Commercial landings of red drum from the Northern Region (1981-2020). See Table 2 for values and data sources.

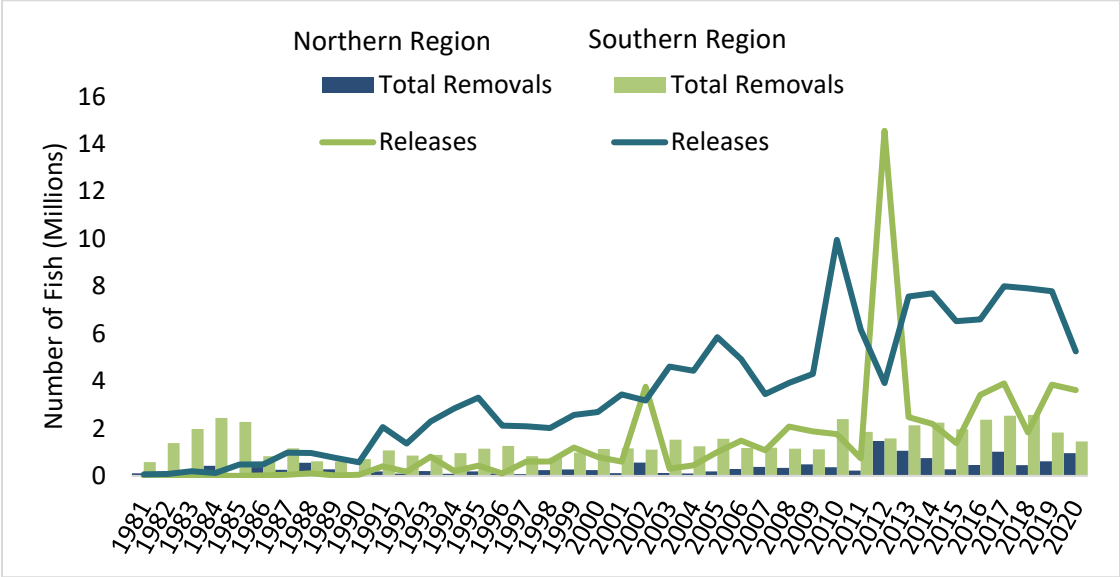

Figure 6. Total recreational removals (numbers) compared to recreational releases of red drum (numbers). See Tables 5 and 6 for values and data sources.

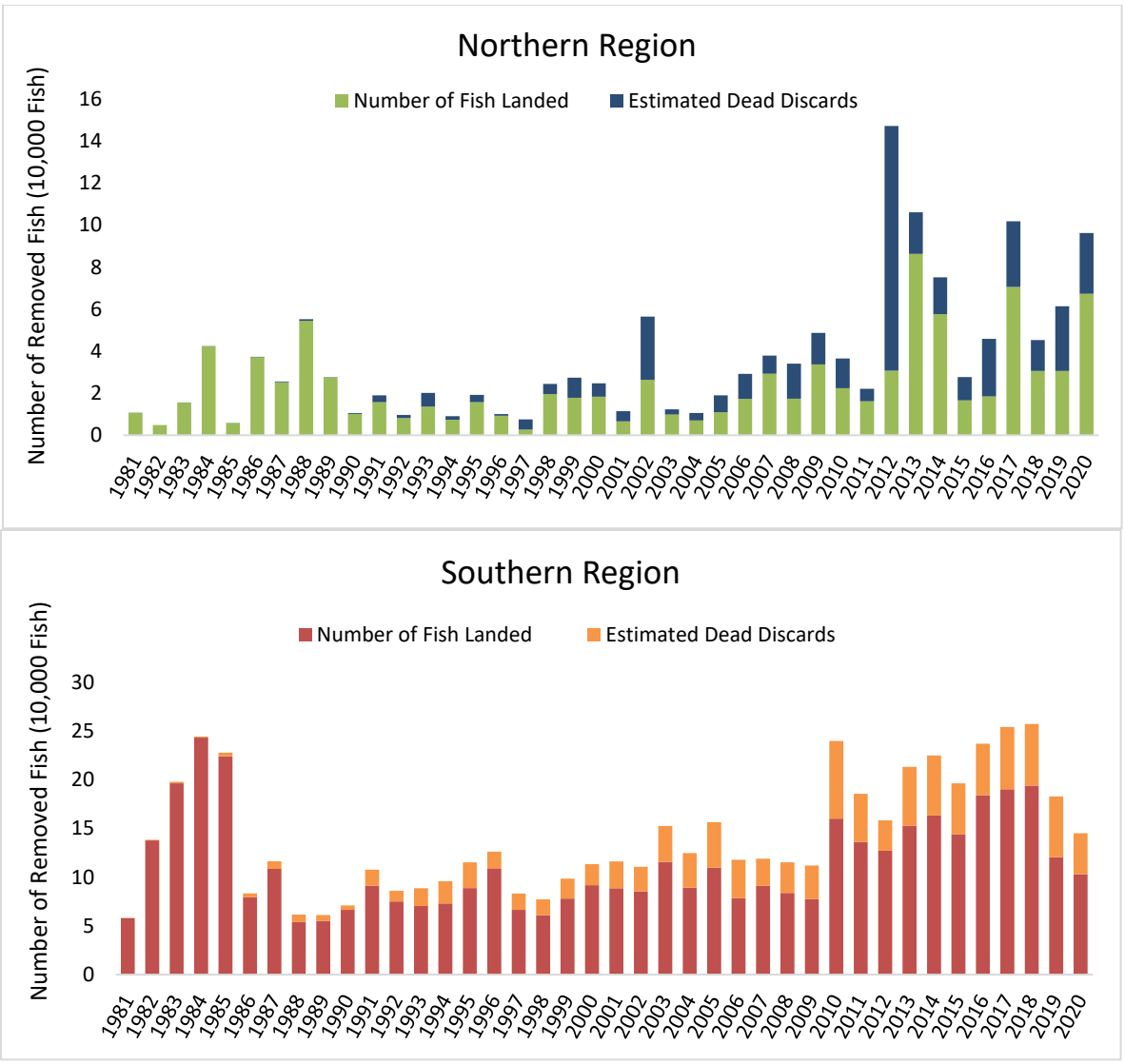

Figure 7. Recreational removals (landings and dead discards) of red drum (numbers) by region. Dead discards are estimated by applying an 8% discard mortality rate to alive releases. See Tables 5 & 6 for values and data sources.

XI. Tables

Table 1. Red drum regulations for 2020. 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 lb 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; red drum must be less than 50% of catch (lbs); 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"; Northern Region – 2 fish per person per day, 8 fish vessel limit, Southern Region – 1 fish per person day bag limit, 8 fish vessel limit	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, 2011-2020. (Source: personal communication with ACCSP, Arlington, VA, for years prior to 2020 and state compliance reports for 2020, 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
2011	0	4,397	91,980	96,607
2012	8,318	2,786	66,519	77,691
2013	3,176	30,137	371,949	405,262
2014	353	14,733	90,647	105,732
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	145,501
2019	32	1,650	56,393	58,107
2020	104	7,989	165,670	173,867

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

Table 4. Recreational landings (pounds) of red drum by state, 2011-2020. (Source: personal communication with MRIP for data prior to 2020; state compliance reports for 2020)

Year	NJ	DE	MD	VA	NC	Northern Region Total
2011	15,567				737,853	753,420
2012		9,948	158,313	225,732	648,342	1,042,335
2013		13,536	12,086	1,185,572	2,214,045	3,425,239
2014				979,388	1,674,595	2,653,983
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

Year		SC	GA	FL	Southern Region Total
2011		1,058,774	433,306	2,871,989	4,364,069
2012		1,007,542	221,044	3,727,020	4,955,606
2013		682,544	452,283	4,341,545	5,476,372
2014		921,971	387,367	4,582,561	5,891,899
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	2,135,588	3,342,073

Table 5. Recreational landings (numbers) of red drum by state, 2011-2020. (Source: personal communication with MRIP for data prior to 2020; state compliance reports for 2020)

Year	NJ	DE	MD	VA	NC	Northern Total
2011	5,432				156,484	161,916
2012		2,256	62,444	90,856	152,005	307,561
2013		3,734	4,766	333,590	520,758	862,848
2014				251,501	324,303	575,804
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

Year	SC	GA	FL		Southern Total
2011	373,083	200,521	787,958		1,361,562
2012	296,380	96,354	877,569		1,270,303
2013	282,688	236,760	1,007,729		1,527,177
2014	393,424	212,193	1,027,980		1,633,597
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

Table 6. Recreational alive releases (numbers) of red drum by state, 2011-2020. (Source: personal communication with MRIP for data prior to 2020; state compliance reports for 2020)

Year	NJ	DE	MD	VA	NC	Northern Region Total	Northern Region Dead Discards
2011				156,584	587,369	743,953	59,516
2012		42,738	1,250,726	8,323,032	4,939,534	14,556,030	1,164,482
2013		1,325	7,125	576,743	1,892,171	2,477,364	198,189
2014		264	659	1,108,646	1,086,967	2,196,536	175,723
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

Year	SC	GA	FL		Southern Region Total	Southern Region Dead Discards
2011	1,617,509	370,451	4,191,567		6,179,527	494,362
2012	1,083,096	220,312	2,614,554		3,917,962	313,437
2013	1,864,510	504,759	5,196,513		7,565,782	605,263
2014	1,874,809	750,619	5,074,602		7,700,030	616,002
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	3,673,651		7,792,011	623,361
2020	1,705,054	393,368	3,154,500		5,252,922	420,234