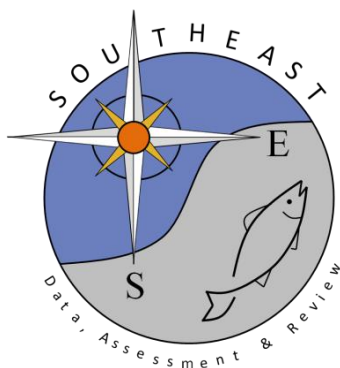


An Evaluation of the Suitability of Private Recreational Fisheries Data from the Marine Recreational Information Program and the Florida State Reef Fish Survey for Use in the SEDAR 90 Stock Assessment

Luiz Barbieri, Chloe Ramsay, and Alena Figueroa

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**An Evaluation of the Suitability of Private Recreational Fisheries
Data from the Marine Recreational Information Program
and the Florida State Reef Fish Survey for Use
in the SEDAR 90 Stock Assessment**

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Introduction

Stock assessment of the South Atlantic red snapper recreational fishery has been complicated by persistent challenges in obtaining statistically robust and reliable estimates of landings and discards since the rebuilding plan was implemented in 2010. Because recreational harvest has generally been prohibited or limited to very short fishing seasons, observed landings have been relatively sparse and difficult to estimate precisely using traditional recreational fisheries surveys. At the same time, rebuilding of the stock has increased encounters with red snapper during trips targeting other species, resulting in substantial numbers of recreational discards that must also be estimated to determine total removals.

Compounding this problem is the challenge of using a broad, general-purpose recreational fisheries survey like the Marine Recreational Information Program (MRIP) for a recreational fishery with short fishing seasons and recreational encounters that can be concentrated in a relatively narrow part of the species' distributional range. Under these conditions, the number of red snapper trips and catches intercepted by MRIP may be small and as a result, harvest and discard estimates can have large measures of uncertainty.

During the SEDAR 90 Data Workshop (DW), the Recreational Working Group discussed these challenges and ultimately recognized several advantages of using the Florida State Reef Fish Survey (SRFS), including its reef fish-specific sampling design, greater number of red snapper intercepts, and monthly effort survey. For Florida private-mode catch, the group recommended using SRFS—and pre-2021 MRIP estimates calibrated into SRFS units—in place of the standard MRIP estimates. This recommendation was not unanimous, as DW participants also discussed potential limitations of using SRFS, particularly because this survey is Florida-specific and not used by the other South Atlantic states.

The recent release of the updated and recalibrated MRIP-FES estimates provides an opportunity to revisit these discussions. Therefore, the SEDAR 90 Assessment Panel has requested a reevaluation of the original DW Recreational Working Group's recommendation for using SRFS as the Florida private recreational data for SEDAR 90. The objective of this SEDAR working paper is to identify objective, science-based criteria for this evaluation and briefly discuss the performance of each survey against these criteria.

Survey Evaluation Criteria

The SEDAR 90 DW terms of reference (ToRs) for recreational fisheries statistics are:

4. Provide recreational catch statistics including both landings and discards in both pounds and number.
 - Evaluate and discuss the adequacy of available data for accurately characterizing landings and discards by fishery sector or gear.
 - Provide length and age distributions for both landings and discards if feasible.
 - Provide estimates of uncertainty around each set of landings and discard estimates.

- Evaluate the utility of mini-season landings estimates, Florida State Reef Fish Survey, FISHstory and SEFHIER.

Unfortunately, these ToRs do not list explicit criteria for evaluating the adequacy of different sources of recreational fisheries data. Therefore, here we contend that an objective, science-based comparison of MRIP and SRFS for use in SEDAR 90 should evaluate each survey against criteria related to both *statistical performance* and *suitability for the sampling domain in question*. Key considerations of this evaluation could include: (i) precision of catch estimates; (ii) survey coverage of the population, fishing modes, areas, seasons, and fishing activity responsible for red snapper removals; (iii) potential sources of bias; and (iv) the adequacy of sample sizes for estimating relatively uncommon or highly concentrated catch events.

This evaluation should also consider whether observed differences between surveys can be explained by their respective sampling designs and whether alternative data treatments materially affect assessment results. These criteria allow the choice of recreational data sources to be based on demonstrated statistical and biological suitability rather than on the magnitude or management implications of the resulting catch estimates.

Based on this rationale, we propose that the following criteria be used for evaluating the adequacy of SRFS and MRIP for use in SEDAR 90:

- (1) Survey review and certification,
- (2) Survey suitability for the sampling domain in question, and
- (3) Precision of estimates as they relate to the MRIP data standards.

Considering these factors is important not just because they will be highly informative for the SEDAR 90 Review Workshop, but also because after this assessment is completed, the SAFMC SSC will need to determine whether the assessment is consistent with the best scientific information available (BSIA) before stock status determination and catch advice can be provided to the Council.

Survey Review and Certification

In addition to survey implementation and producing catch and effort estimates, NOAA Fisheries Office of Science & Technology (OS&T) and MRIP help states and regional partners meet their unique regional recreational fishing data needs. This includes access to technical resources; expert statistical assistance and guidance; funding for regionally-identified recreational fishing data collection priorities; and supporting the development, certification, and implementation of state-led data collection programs. Under this umbrella of support, the use of specialized MRIP supplemental surveys to improve the quality and timeliness of recreational fisheries data for Council-managed species relies on robust planning and coordination with the MRIP Regional Implementation Team and all of its component partners in the region (Interstate Fisheries Commissions, Regional Fishery Management Councils, states in the region, and NOAA Fisheries). The implementation of supplemental recreational fisheries surveys solely at the state level and not in close coordination with the full suite of regional partners is discouraged because it creates difficulties for regional, Council-based assessment and management.

NOAA Fisheries’ process for reviewing the statistical rigor of a recreational fishing survey design is known as *certification*. To earn certification, survey designs and estimation methods must be documented, adhere to applicable standards, and earn validation by a peer review. The steps of the certification process are described in more detail in NOAA Fisheries Procedural Directive 04-114-02: Guidance and Procedures for the MRIP Certification Process ([PDF, 9 pages](#)).

Both MRIP and SRFS have been peer-reviewed according to formal terms of reference and are certified through the official NOAA Fisheries MRIP certification process. The MRIP review was conducted through the National Academies of Science study: Review of the Marine Recreational Information Program (NASEM, 2017)¹. In coordination with OS&T and MRIP, SRFS was reviewed in 2018 during the process of MRIP certification when the survey was implemented just in the Gulf (at that point the survey was called Gulf Reef Fish Survey or GRFS)².

However, to help address SEDAR 90 Assessment Panel questions regarding the need to have SRFS certified for use in the South Atlantic specifically—since MRIP certification of SRFS happened when the survey was implemented just in the Gulf—FWC-FWRI staff reached out to Dr. Richard Cody (Director, Fisheries Statistics Division, NOAA Fisheries OS&T) and received the following response:

“Thanks for including me in the conversation. There have not been what we (OS&T) would deem substantive survey design-related changes to the SRFS in the move to increase coverage to the entire state. If anything, a strong argument could be made that the survey design as currently implemented provides for better coverage—being better suited to statewide implementation. The reef fish subscription (the basis of the mail survey sample frame) is open to all residents/non-residents and a statewide (subscription wide) draw rather than a regional (sub-state) draw would be less susceptible to non-sampling (coverage) related error. To my knowledge, the types of information (variables) being collected have not changed in the current iteration and estimators therefore remain aligned with the survey design. FWC provides an annual report that is required to document planned and unplanned changes to the survey design (e.g., question and estimator-related changes, etc.) to OS&T and to my knowledge, no changes have been noted. Glad to chat about it if needed.”

Therefore, we consider that the need for scientific review and certification has been met by both SRFS and MRIP. However, in the spirit of transparency and commitment to scientific rigor we propose that if deemed necessary by the SEDAR 90 Assessment Panel, NOAA Fisheries OS&T engage either one of the highly-qualified survey sampling statisticians that currently staff MRIP, or alternatively one of the professional survey sampling statisticians in their pool of statistical consultants to conduct a formal re-review of the MRIP or the SRFS methodologies and

¹ The study report can be downloaded here: <https://www.nationalacademies.org/projects/DELS-OSB-15-04>

² Documentation for the SRFS certification can be found here: https://media.fisheries.noaa.gov/dam-migration/09_gulf-reef-fish-survey-decision-memo-with-attachments.pdf

protocols for use in the South Atlantic. The point here is to highlight the fact that if concerns at the SEDAR 90 DW about the potential for biases in these surveys remain, a formal evaluation on these questions could be conducted by survey sampling experts that are most qualified for the task.

Survey Suitability for the Sampling Domain in Question

Several attributes of southeast US marine recreational fisheries make them difficult to characterize and monitor. While MRIP was developed to address some of these challenges and to generate estimates of recreational fisheries catch and effort for use in stock assessment and management (NRC, 2006; NASEM, 2017), MRIP surveys were neither intended nor designed to support in-season monitoring of recreational catch. The main products of the MRIP general survey are bi-monthly catch estimates that are most informative at the annual scale. While annual estimates of landings and discards are usually adequate for stock assessments of commonly encountered species, annual MRIP estimates at the state and regional levels are often considered inadequate for managing recreational fisheries with ACLs and typically lack adequate precision for species that are rarely intercepted (GAO, 2015; NASEM, 2017, 2021). For example, Figure 1 shows the number of recreational fishing trips by area fished for the South Atlantic region for the period 1981-2025. The main takeaway is that fishing trips in inland (bays, estuaries, and sounds) and state oceanic waters (≤ 3 miles) represent about 82% of the total fishing trips in the South Atlantic region while trips in the EEZ (>3 miles) represent only 18% of the total. As a generalized recreational fishing survey, MRIP's standard Angler Point Intercept Survey (APAIS) for the South Atlantic region does not apportion dockside sampling assignments by these "area fished" categories, instead measuring this estimation domain after an angler is intercepted. Although APAIS does stratify by fishing mode (shore, charter, private) this stratification scheme does not include sampling to specifically target the rare-event EEZ trips. Despite this, red snapper is one of several Council-managed species that is caught primarily in this EEZ region, where APAIS data are relatively scarce.

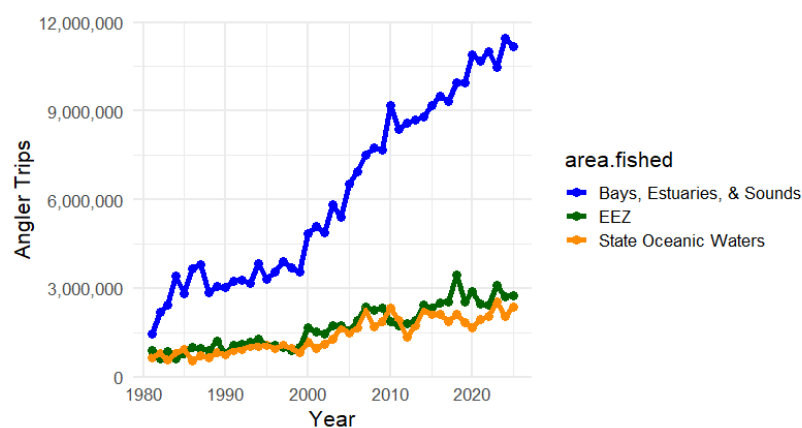


Fig. 1 – Estimated number of MRIP private recreational angler trips in the South Atlantic region (North Carolina - east Florida) by fishing area for the period 1981-2025.

Having said that, in Florida, for the purpose of supporting the SRFS survey, MRIP has worked with FWC to categorize “Offshore” access-sites as a subset of private access-sites. On average, 20-30% of private recreational (PR) mode APAIS assignments are deliberately allocated to ramps and marinas with a relatively high likelihood of intercepting offshore fishing trips. Therefore, unlike the design used for the remainder of the South Atlantic region, in Florida, MRIP incorporates an explicit sampling mechanism intended to increase representation of offshore trips—although the actual area fished is still determined only after the angler is interviewed. While MRIP does conduct some APAIS assignments at these offshore access-sites, there are 2-3 times as many SRFS assignments conducted at these sites in any given month.

This happens because SRFS is a *specialized supplemental survey* that was designed in cooperation with NOAA Fisheries OS&T and MRIP to generate more precise recreational fisheries estimates for reef fisheries that have been traditionally not well sampled by a generalized survey (GAO, 2015; NASEM, 2021). For example, Table 1 below shows the top 25 recreational fisheries species in the South Atlantic region ranked by the total number of fish estimated by the MRIP survey. Given the relatively small proportion of private recreational fishing trips in the EEZ, and without an explicit sampling stratification scheme for targeting this sampling domain, it becomes extremely difficult for MRIP to effectively sample many Council-managed species.

Table 1. Top 25 recreational fisheries species in the South Atlantic region (North Carolina – east Florida) ranked by the total number of fish estimated by the MRIP survey in 2025.

Rank	Species	Total Catch	Rank	Species	Total Catch
1	SPOTTED SEATROUT	8,116,266	13	HARDHEAD CATFISH	2,176,950
2	RED DRUM	6,705,054	14	BLUEFISH	2,082,000
3	BLACK SEA BASS	4,230,809	15	GRUNT FAMILY	1,864,264
4	ATLANTIC CROAKER	4,086,456	16	DOLPHIN	1,698,656
5	LEFTEYE FLOUNDER GENUS	3,514,199	17	GAFFTOPSAIL CATFISH	1,312,012
6	HERRING FAMILY	3,457,172	18	SOUTHERN KINGFISH	1,278,485
7	MENHADEN GENUS	3,255,245	19	CREVALLE JACK	1,107,402
8	GRAY SNAPPER	3,214,868	20	BLACK DRUM	1,092,455
9	SHEEPSHEAD	3,214,304	21	SPANISH MACKEREL	1,019,625
10	PINFISH	2,984,706	22	SPOT	994,057
11	MULLET GENUS	2,640,517	23	TOMTATE	979,500
12	ATLANTIC MENHADEN	2,577,016	24	LITTLE TUNNY	954,137
			25	RED SNAPPER	943,534

The MRIP survey design does a great job for the more common, inshore species that are managed by the states. However, most of the offshore, Council-managed species fall under the “rare-event species” category. More details on this point are provided in the National Academies

study report (NASEM, 2021)³ NOAA Fisheries commissioned to address data and management strategies for recreational fisheries managed with ACLs.

Due to these sampling domain issues, the next relevant question is sample size, especially as it relates to sample allocation by domain. Because most red snapper (90-95%) are caught on the relatively small share of South Atlantic PR trips that occur in the EEZ, only a limited number of standard MRIP APAIS intercepts contribute directly to red snapper catch estimates. Therefore, achieving consistently acceptable precision for red snapper catch (i.e., landings and discards) with Percent Standard Error (PSE) values below 30% would require a substantial increase in effective sample size, particularly among PR trips fishing in the EEZ. Under the current general-purpose APAIS design, obtaining that increase through broader sampling alone would require a dramatic expansion of overall sampling effort. Therefore, the point of using a specialized supplemental survey like SRFS to supplement MRIP is that a more targeted offshore sampling design achieves the needed precision more efficiently—although at a higher cost.

We will get into a more in-depth discussion of the precision of estimates more explicitly in the next section, but below is a table MRIP developed comparing multiple approaches to address difficult-to-sample recreational fisheries sampling domains. The red box indicates the approach FWC adopted for developing SRFS. Again, keep in mind that this was not done in a vacuum, FWC-FWRI worked with MRIP and their statistical consultants to get this specialized survey implemented, and went through the official MRIP certification process to make sure the survey adheres to all the requirements for meeting data standards.

Table 2. A comparison of different approaches NOAA Fisheries OS&T considers for improving recreational fisheries survey data for challenging sampling domains.

Approach	Precision Gain	Cost (\$)	Time to Implement	Species Specificity	Limitations
Increase sample sizes	Associated with cost	Variable	Short	Low-Moderate	Source(s) of additional funds
Optimize existing sample allocation	Variable	None	Moderate	Variable-Moderate	Precision trade-offs among species
Modify existing survey designs	Variable	None	Moderate	Variable-Moderate	Precision trade-offs among species
Design specialized program	High	Moderate-High	Long	High	Increased cost and reporting burden
Custom Estimation	Variable	None	Short-Long	High	Estimation domain changes, model use, method selection/justification


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³ The study report can be downloaded here: <https://www.nationalacademies.org/projects/DELS-OSB-19-02>

The MRIP program itself has used this specific approach for specialized fisheries and difficult-to-sample domains. Originating in 1992 and implemented from Maine to Virginia, the Large Pelagics Survey (LPS)⁴ is a specialized program designed to support the information needs of stock assessment and fishery management for pelagic fishes including tuna, billfishes, swordfish, sharks, and other pelagic species that are under federal management, such as wahoo, dolphin, and amberjack. The universe of fishing activity covered by the LPS includes vessels that fish for these pelagic species and hold a NOAA Fisheries HMS permit. The specialized LPS was the basic “model” used when FWC worked with OS&T and MRIP to develop SRFS.

Precision of Estimates as they Relate to MRIP Data Standards

The diversity of recreational fishing survey approaches required to meet the demands of stock assessment and fisheries management in each of the US regions presents a challenge for creating a national database, given that it results in differences in how data are collected, processed, and reported (GAO, 2015). MRIP responded to this challenge by creating data quality standards:

- Standard 1: Survey Concepts and Justification
- Standard 2. Survey Design
- Standard 3. Data Quality
- Standard 4. Transition Planning
- Standard 5. Review Procedures
- Standard 6. Process Improvement
- Standard 7. Access and Information Management

These standards guide federal efforts to collect data while also giving state partners guidance on how to construct their surveys to obtain federal certification and have their state data included in MRIP data programs. Thus, these data standards provide a mechanism for promoting high data quality from all sources. In general, the standards reflect best practices currently in place at the National Center for Health Statistics, U.S. Census Bureau, and other federal agencies, as well as statistical survey standards and guidelines published by the Office of Management and Budget.

Given the importance of the data quality standards, an increase in the number of state-conducted surveys, and in anticipation of Congressional direction, NOAA Fisheries’ OS&T commissioned a National Academies study to perform a peer review of the standards (NASEM, 2026)⁵. Briefly, the minimum precision standard for recreational fisheries data use is PSE values of <30%. Estimates with PSEs between 30-50% are to be treated with caution and estimates with PSEs >50% are not supported for use. Based on these criteria, the question then becomes: do we have sufficient South Atlantic red snapper recreational fisheries PR-mode data that meet

⁴ More information on the LPS can be found here: <https://www.fisheries.noaa.gov/recreational-fishing-data/large-pelagics-survey-glance>.

⁵ The recently released study report can be found here: <https://www.nationalacademies.org/projects/DBASSE-CNSTAT-24-03>.

the minimum data standards and can be then used for the SEDAR 90 assessment without compromising scientific rigor and credibility?

Tables 3-11 below provide results of a series of data queries summarizing MRIP PR-mode estimates at the regional scale (NC to east FL combined) and at the individual state scale. Tables 12 and 13 provide similar SRFS estimates for east Florida (since SRFS is not conducted in NC, SC, and GA). These tables provide annual estimates of either landings or discards for the years when those data are available as well as PSE values associated with each annual estimate.

MRIP Estimates

Table 3. MRIP annual PR landings estimates (A+B1) of red snapper in numbers of fish for the **South Atlantic region (NC to east FL combined)** for the period 1981-2025. Table cells marked in yellow indicate estimates with PSE values >30% but <50% (CAUTION). Cells marked in red indicate estimates with PSE values >50% (DO NOT USE).

- Summary of findings: for the 44 years of data used for this table, only 15 years (34%) meet the minimum standard of being below 30% PSE. Eleven years (25%) have PSE values >50% (DO NOT USE).

Year	Survey	Landings (no. of fish)	PSE
1981	MRIP	138,440	49.0
1982	MRIP	25,849	43.0
1983	MRIP	18,275	90.0
1984	MRIP	84,032	40.0
1985	MRIP	126,316	53.0
1986	MRIP	51,313	55.0
1987	MRIP	34,218	38.0
1988	MRIP	42,484	42.0
1989	MRIP	92,981	42.0
1990	MRIP	4,569	52.0
1991	MRIP	22,364	73.0
1992	MRIP	23,391	42.0
1993	MRIP	7,583	39.0
1994	MRIP	11,305	51.0
1995	MRIP	1,825	59.0
1996	MRIP	9,402	53.0
1997	MRIP	2,675	67.0
1998	MRIP	5,247	40.0
1999	MRIP	18,645	30.0
2000	MRIP	62,833	29.0

2001	MRIP	35,155	27.0
2002	MRIP	30,574	25.0
2003	MRIP	13,652	29.0
2004	MRIP	30,123	29.0
2005	MRIP	17,925	37.0
2006	MRIP	20,636	45.0
2007	MRIP	33,875	37.0
2008	MRIP	161,368	28.0
2009	MRIP	161,347	26.0
2010	MRIP	0	
2011	MRIP	0	
2012	MRIP	14,333	23.5
2013	MRIP	7,080	18.7
2014	MRIP	31,047	17.9
2015	MRIP	899	100.0
2016	MRIP	0	
2017	MRIP	18,866	67.1
2018	MRIP	50,635	37.5
2019	MRIP	58,097	23.6
2020	MRIP	57,182	24.4
2021	MRIP	47,400	17.7
2022	MRIP	28,784	29.0
2023	MRIP	75,933	38.9
2024	MRIP	44,320	49.0
2025	MRIP	47,851	27.1

Table 4. MRIP annual PR discard estimates (B2) of red snapper in numbers of fish for the South Atlantic region (NC to east FL combined) for the period 1981-2025. Table cells marked in yellow indicate estimates with PSE values >30% but <50% (CAUTION). Cells marked in red indicate estimates with PSE values >50% (DO NOT USE).

- Summary of findings: for these 44 years of data, only 16 years (36%) meet the minimum standard of being below 30% PSE. Eight years (18%) have PSE values >50% (DO NOT USE). Five years (11%) have no estimates available, indicating no anglers releasing red snapper were interviewed at the dock at all.

Year	Survey	Releases (no. of fish)	PSE
1981	MRIP	0	
1982	MRIP	0	
1983	MRIP	0	

1984	MRIP	5,831	100.0
1985	MRIP	27,655	85.0
1986	MRIP	0	
1987	MRIP	52,154	74.0
1988	MRIP	23,959	46.0
1989	MRIP	12,045	51.0
1990	MRIP	0	
1991	MRIP	22,633	55.0
1992	MRIP	12,288	46.0
1993	MRIP	37,065	63.0
1994	MRIP	59,804	47.0
1995	MRIP	25,136	37.0
1996	MRIP	22,477	84.0
1997	MRIP	6,516	46.0
1998	MRIP	22,197	48.0
1999	MRIP	79,870	26.0
2000	MRIP	222,679	27.0
2001	MRIP	136,364	28.0
2002	MRIP	96,996	29.0
2003	MRIP	123,764	32.0
2004	MRIP	212,580	24.0
2005	MRIP	39,000	30.0
2006	MRIP	136,430	32.0
2007	MRIP	537,236	30.0
2008	MRIP	679,617	28.0
2009	MRIP	357,507	25.0
2010	MRIP	189,580	30.0
2011	MRIP	124,736	56.0
2012	MRIP	222,918	36.5
2013	MRIP	143,217	34.9
2014	MRIP	478,784	26.5
2015	MRIP	705,245	38.0
2016	MRIP	1,421,168	27.0
2017	MRIP	821,534	26.8
2018	MRIP	2,118,712	29.1
2019	MRIP	1,381,420	27.2
2020	MRIP	2,190,586	29.8
2021	MRIP	1,541,722	21.4
2022	MRIP	1,565,925	35.5
2023	MRIP	1,458,804	22.7

2024	MRIP	1,889,079	34.6
2025	MRIP	918,092	21.9

Table 5. MRIP annual PR landings estimates (A+B1) of red snapper in numbers of fish for the **South Atlantic region by state (NC to east FL)** for the period 1981-2025. Table cells marked in yellow indicate estimates with PSE values >30% but <50% (CAUTION). Cells marked in red indicate estimates with PSE values >50% (DO NOT USE).

- Summary of findings: only 4 estimates across the 176 (2%) meet the minimum standard, the rest are flagged as either above a 30% PSE (CAUTION), above a 50% PSE (DO NOT USE), or have no estimates available, indicating no anglers releasing red snapper were interviewed at the dock at all.

Year	Survey	State	Landings (no. of fish)	PSE
1981	MRIP	FL	138,440	49.0
1982	MRIP	FL	25,849	43.0
1983	MRIP	FL	16,452	100.0
1983	MRIP	GA	1,824	86.9
1984	MRIP	FL	84,032	40.0
1985	MRIP	FL	121,803	55.0
1985	MRIP	GA	4,013	86.9
1985	MRIP	SC	500	108.4
1986	MRIP	FL	50,086	56.0
1986	MRIP	GA	389	75.1
1986	MRIP	SC	838	97.6
1987	MRIP	FL	21,739	47.0
1987	MRIP	GA	1,293	72.8
1987	MRIP	NC	10,937	72.4
1987	MRIP	SC	250	104.3
1988	MRIP	FL	39,018	45.0
1988	MRIP	NC	2,901	73.8
1988	MRIP	SC	565	73.2
1989	MRIP	FL	90,915	43.0
1989	MRIP	GA	930	104.6
1989	MRIP	NC	837	54.0
1989	MRIP	SC	299	109.8
1990	MRIP	FL	4,462	53.0
1990	MRIP	NC	107	101.5
1991	MRIP	FL	22,056	74.0

1991	MRIP	GA	0	
1991	MRIP	NC	309	100.4
1992	MRIP	FL	22,789	44.0
1992	MRIP	GA	364	73.5
1992	MRIP	NC	237	101.0
1993	MRIP	FL	7,583	39.0
1993	MRIP	NC	0	
1993	MRIP	SC	0	
1994	MRIP	FL	10,368	55.0
1994	MRIP	NC	937	94.9
1995	MRIP	FL	1,825	59.0
1996	MRIP	FL	8,719	57.0
1996	MRIP	GA	569	87.7
1996	MRIP	NC	114	101.4
1997	MRIP	FL	2,675	67.0
1998	MRIP	FL	5,098	41.0
1998	MRIP	NC	0	
1998	MRIP	SC	149	89.1
1999	MRIP	FL	17,891	31.0
1999	MRIP	SC	754	102.0
2000	MRIP	FL	58,296	31.0
2000	MRIP	NC	255	100.6
2000	MRIP	SC	4,282	67.0
2001	MRIP	FL	34,286	27.0
2001	MRIP	GA	0	
2001	MRIP	NC	870	82.6
2002	MRIP	FL	30,135	26.0
2002	MRIP	SC	439	93.4
2003	MRIP	FL	12,820	30.0
2003	MRIP	SC	832	81.5
2004	MRIP	FL	25,102	32.0
2004	MRIP	GA	3,885	77.6
2004	MRIP	NC	1,137	100.0
2005	MRIP	FL	11,919	41.0
2005	MRIP	GA	4,442	76.2
2005	MRIP	NC	1,565	79.7
2006	MRIP	FL	12,988	54.0
2006	MRIP	GA	5,766	90.2
2006	MRIP	NC	104	101.4
2006	MRIP	SC	1,778	103.6

2007	MRIP	FL	32,217	39.0
2007	MRIP	GA	926	101.3
2007	MRIP	SC	732	99.9
2008	MRIP	FL	148,730	30.0
2008	MRIP	GA	11,278	46.9
2008	MRIP	SC	1,360	72.3
2009	MRIP	FL	157,183	27.0
2009	MRIP	GA	2,702	81.2
2009	MRIP	NC	1,203	60.3
2009	MRIP	SC	259	111.1
2010	MRIP	FL	0	
2010	MRIP	NC	0	
2010	MRIP	SC	0	
2011	MRIP	FL	0	
2012	MRIP	FL	7,579	96.0
2012	MRIP	GA	2,880	83.8
2012	MRIP	NC	0	
2012	MRIP	SC	0	
2013	MRIP	FL	43,463	82.0
2013	MRIP	GA	0	
2013	MRIP	NC	0	
2013	MRIP	SC	0	
2014	MRIP	FL	151,012	47.0
2014	MRIP	GA	5,830	57.8
2014	MRIP	NC	0	
2014	MRIP	SC	191	104.8
2015	MRIP	FL	899	100.0
2015	MRIP	GA	0	
2015	MRIP	NC	0	
2015	MRIP	SC	0	
2016	MRIP	FL	0	
2016	MRIP	GA	0	
2016	MRIP	NC	0	
2016	MRIP	SC	0	
2017	MRIP	FL	60,028	73.0
2017	MRIP	GA	0	
2017	MRIP	NC	0	
2017	MRIP	SC	792	113.3
2018	MRIP	FL	462,968	45.0
2018	MRIP	GA	17,678	102.5

2018	MRIP	SC	0	
2019	MRIP	FL	131,139	64.0
2019	MRIP	GA	9,907	60.7
2019	MRIP	NC	0	
2019	MRIP	SC	10,436	95.2
2020	MRIP	FL	418,401	84.0
2020	MRIP	GA	9,819	71.5
2020	MRIP	NC	874	102.0
2020	MRIP	SC	15,568	54.5
2021	MRIP	FL	59,232	53.0
2021	MRIP	GA	4,998	67.3
2021	MRIP	NC	5,790	25.4
2021	MRIP	SC	0	
2022	MRIP	FL	104,156	56.0
2022	MRIP	GA	2,014	103.5
2022	MRIP	NC	3,949	90.1
2022	MRIP	SC	0	
2023	MRIP	FL	275,560	58.0
2023	MRIP	GA	27,910	67.2
2023	MRIP	NC	0	
2023	MRIP	SC	464	95.7
2024	MRIP	FL	249,506	74.0
2024	MRIP	GA	2,420	81.3
2024	MRIP	NC	0	
2024	MRIP	SC	0	
2025	MRIP	FL	1,721	100.0
2025	MRIP	GA	11,479	52.3
2025	MRIP	NC	6,219	100.1
2025	MRIP	SC	6,020	86.9

Table 6. MRIP annual PR discard estimates (B2) of red snapper in numbers of fish for the **South Atlantic region by state by year** for the period 1981-2025. Table cells marked in yellow indicate estimates with PSE values >30% but <50% (CAUTION). Cells marked in red indicate estimates with PSE values >50% (DO NOT USE).

- Summary of findings: similar to results on harvest shown in Table 5, most discard estimates either have a PSE above 30% (CAUTION) or above 50% (DO NOT USE). Only 15 (8.5%) meet the minimum standards.

Year	Survey	State	Releases	PSE
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(no. of fish)			
1981	MRIP	FL	0
1982	MRIP	FL	0
1983	MRIP	FL	0
1983	MRIP	GA	0
1984	MRIP	FL	5,831 100.0
1985	MRIP	FL	27,655 85.0
1985	MRIP	GA	0
1985	MRIP	SC	0
1986	MRIP	FL	0
1986	MRIP	GA	0
1986	MRIP	SC	0
1987	MRIP	FL	52,154 74.0
1987	MRIP	GA	0
1987	MRIP	NC	0
1987	MRIP	SC	0
1988	MRIP	FL	23,959 46.0
1988	MRIP	NC	0
1988	MRIP	SC	0
1989	MRIP	FL	12,045 51.0
1989	MRIP	GA	0
1989	MRIP	NC	0
1989	MRIP	SC	0
1990	MRIP	FL	0
1990	MRIP	NC	0
1991	MRIP	FL	22,081 56.0
1991	MRIP	GA	552 106.1
1991	MRIP	NC	0
1992	MRIP	FL	12,040 47.0
1992	MRIP	GA	0
1992	MRIP	NC	247 101.0
1993	MRIP	FL	34,730 68.0
1993	MRIP	NC	1,400 97.1
1993	MRIP	SC	936 92.4
1994	MRIP	FL	59,804 47.0
1994	MRIP	NC	0
1995	MRIP	FL	25,136 37.0
1996	MRIP	FL	22,414 84.0
1996	MRIP	GA	0
1996	MRIP	NC	63 98.4

1997	MRIP	FL	6,516	46.0
1998	MRIP	FL	21,708	49.0
1998	MRIP	NC	34	100.5
1998	MRIP	SC	456	89.1
1999	MRIP	FL	78,878	27.0
1999	MRIP	SC	992	97.7
2000	MRIP	FL	190,494	29.0
2000	MRIP	NC	1,347	100.6
2000	MRIP	SC	30,838	73.1
2001	MRIP	FL	135,477	28.0
2001	MRIP	GA	887	95.8
2001	MRIP	NC	0	
2002	MRIP	FL	96,955	29.0
2002	MRIP	SC	41	105.9
2003	MRIP	FL	122,932	32.0
2003	MRIP	SC	832	81.5
2004	MRIP	FL	207,305	25.0
2004	MRIP	GA	5,276	78.4
2004	MRIP	NC	0	
2005	MRIP	FL	39,000	30.0
2005	MRIP	GA	0	
2005	MRIP	NC	0	
2006	MRIP	FL	115,614	33.0
2006	MRIP	GA	20,527	74.6
2006	MRIP	NC	289	100.8
2006	MRIP	SC	0	
2007	MRIP	FL	498,961	31.0
2007	MRIP	GA	38,275	98.0
2007	MRIP	SC	0	
2008	MRIP	FL	646,583	29.0
2008	MRIP	GA	28,131	58.6
2008	MRIP	SC	4,904	103.8
2009	MRIP	FL	348,333	25.0
2009	MRIP	GA	8,998	58.1
2009	MRIP	NC	0	
2009	MRIP	SC	175	97.2
2010	MRIP	FL	182,095	31.0
2010	MRIP	NC	1,403	79.9
2010	MRIP	SC	6,082	66.9
2011	MRIP	FL	124,736	56.0

2012	MRIP	FL	213,809	38.0
2012	MRIP	GA	960	83.8
2012	MRIP	NC	186	101.6
2012	MRIP	SC	7,954	92.1
2013	MRIP	FL	125,417	38.0
2013	MRIP	GA	15,804	86.5
2013	MRIP	NC	342	105.5
2013	MRIP	SC	1,640	64.7
2014	MRIP	FL	418,736	29.0
2014	MRIP	GA	46,935	66.9
2014	MRIP	NC	4,858	89.1
2014	MRIP	SC	8,255	65.6
2015	MRIP	FL	698,399	38.0
2015	MRIP	GA	1,028	95.8
2015	MRIP	NC	2,483	59.2
2015	MRIP	SC	3,335	62.1
2016	MRIP	FL	1,396,926	27.0
2016	MRIP	GA	4,092	68.6
2016	MRIP	NC	14,356	52.7
2016	MRIP	SC	5,794	81.9
2017	MRIP	FL	756,324	29.0
2017	MRIP	GA	50,871	51.3
2017	MRIP	NC	1,399	56.0
2017	MRIP	SC	12,939	60.5
2018	MRIP	FL	2,080,417	30.0
2018	MRIP	GA	24,269	65.8
2018	MRIP	SC	14,021	81.7
2019	MRIP	FL	1,269,953	29.0
2019	MRIP	GA	32,216	56.0
2019	MRIP	NC	5,808	84.0
2019	MRIP	SC	73,440	84.2
2020	MRIP	FL	2,021,056	32.0
2020	MRIP	GA	71,437	41.3
2020	MRIP	NC	11,314	51.8
2020	MRIP	SC	86,779	71.0
2021	MRIP	FL	1,421,241	23.0
2021	MRIP	GA	51,693	54.1
2021	MRIP	NC	10,585	50.0
2021	MRIP	SC	58,204	61.5
2022	MRIP	FL	1,382,494	40.0

2022	MRIP	GA	102,853	56.0
2022	MRIP	NC	36,412	59.3
2022	MRIP	SC	44,165	52.6
2023	MRIP	FL	1,358,363	24.0
2023	MRIP	GA	8,995	92.2
2023	MRIP	NC	50,961	44.3
2023	MRIP	SC	40,487	62.2
2024	MRIP	FL	1,673,242	39.0
2024	MRIP	GA	96,583	36.1
2024	MRIP	NC	53,474	61.9
2024	MRIP	SC	65,779	53.9
2025	MRIP	FL	732,149	27.0
2025	MRIP	GA	83,125	37.9
2025	MRIP	NC	41,957	40.6
2025	MRIP	SC	60,861	28.1

Considering that since 2010 South Atlantic red snapper recreational harvest has been limited to mostly short mini seasons that are not considered properly sampled by either MRIP or SRFS, let's forget about harvest for now and just focus on discard estimates (B2) going forward for the MRIP PR mode for the period 1981-2025.

Table 7. MRIP annual PR discard estimates (B2) of red snapper in numbers of fish for **east Florida** for the period 1981-2025. Table cells marked in yellow indicate estimates with PSE values >30% but <50% (CAUTION). Cells marked in red indicate estimates with PSE values >50% (DO NOT USE).

- Summary of findings: for the 44 years of data available, 26 years (59%) have PSE values above 30% and eight of those have PSE values >50% (flagged DO NOT USE).

Year	Survey	State	Releases (no. of fish)	PSE
1981	MRIP	FL	0	
1982	MRIP	FL	0	
1983	MRIP	FL	0	
1984	MRIP	FL	5,831	100.0
1985	MRIP	FL	27,655	85.0
1986	MRIP	FL	0	
1987	MRIP	FL	52,154	74.0
1988	MRIP	FL	23,959	46.0
1989	MRIP	FL	12,045	51.0

Year	Survey	State	Releases (no. of fish)	PSE
1990	MRIP	FL	0	
1991	MRIP	FL	22,081	56.0
1992	MRIP	FL	12,040	47.0
1993	MRIP	FL	34,730	68.0
1994	MRIP	FL	59,804	47.0
1995	MRIP	FL	25,136	37.0
1996	MRIP	FL	22,414	84.0
1997	MRIP	FL	6,516	46.0
1998	MRIP	FL	21,708	49.0
1999	MRIP	FL	78,878	27.0
2000	MRIP	FL	190,494	29.0
2001	MRIP	FL	135,477	28.0
2002	MRIP	FL	96,955	29.0
2003	MRIP	FL	122,932	32.0
2004	MRIP	FL	207,305	25.0
2005	MRIP	FL	39,000	30.0
2006	MRIP	FL	115,614	33.0
2007	MRIP	FL	498,961	31.0
2008	MRIP	FL	646,583	29.0
2009	MRIP	FL	348,333	25.0
2010	MRIP	FL	182,095	31.0
2011	MRIP	FL	124,736	56.0
2012	MRIP	FL	213,809	38.0
2013	MRIP	FL	125,417	38.0
2014	MRIP	FL	418,736	29.0
2015	MRIP	FL	698,399	38.0
2016	MRIP	FL	1,396,926	27.0
2017	MRIP	FL	756,324	29.0
2018	MRIP	FL	2,080,417	30.0
2019	MRIP	FL	1,269,953	29.0
2020	MRIP	FL	2,021,056	32.0
2021	MRIP	FL	1,421,241	23.0
2022	MRIP	FL	1,382,494	40.0
2023	MRIP	FL	1,358,363	24.0
2024	MRIP	FL	1,673,242	39.0
2025	MRIP	FL	732,149	27.0

Table 8. MRIP annual PR discard estimates (B2) of red snapper in numbers of fish for **Georgia** for the period 1981-2025. Table cells marked in yellow indicate estimates with PSE values >30% but <50% (CAUTION). Cells marked in red indicate estimates with PSE values >50% (DO NOT USE). No anglers discarding red snapper were intercepted in GA until 1991.

- Summary of findings: for the 21 years of data available, all of them have PSE values above 30% and 18 of those have PSE values above 50% (flagged DO NOT USE). Three years have no data at all.

Year	Survey	State	Releases (no. of fish)	PSE
1991	MRIP	GA	552	106.1
1992	MRIP	GA	0	
1996	MRIP	GA	0	
2001	MRIP	GA	887	95.8
2004	MRIP	GA	5,276	78.4
2005	MRIP	GA	0	
2006	MRIP	GA	20,527	74.6
2007	MRIP	GA	38,275	98.0
2008	MRIP	GA	28,131	58.6
2009	MRIP	GA	8,998	58.1
2012	MRIP	GA	960	83.8
2013	MRIP	GA	15,804	86.5
2014	MRIP	GA	46,935	66.9
2015	MRIP	GA	1,028	95.8
2016	MRIP	GA	4,092	68.6
2017	MRIP	GA	50,871	51.3
2018	MRIP	GA	24,269	65.8
2019	MRIP	GA	32,216	56.0
2020	MRIP	GA	71,437	41.3
2021	MRIP	GA	51,693	54.1
2022	MRIP	GA	102,853	56.0
2023	MRIP	GA	8,995	92.2
2024	MRIP	GA	96,583	36.1
2025	MRIP	GA	83,125	37.9

Table 9. MRIP annual PR discard estimates (B2) of red snapper in numbers of fish for **South Carolina** for the period 1981-2025. Table cells marked in yellow indicate estimates with PSE values >30% but <50% (CAUTION). Cells marked in red indicate estimates with PSE values >50% (DO NOT USE). No anglers discarding red snapper were intercepted in SC until 1993.

- Summary of findings: for the 23 years of data available 22 (96%) have PSE estimates >50% (DO NOT USE). Two years have no data at all.

Year	Survey	State	Releases (no. of fish)	PSE
1993	MRIP	SC	936	92.4
1998	MRIP	SC	456	89.1
1999	MRIP	SC	992	97.7
2000	MRIP	SC	30,838	73.1
2002	MRIP	SC	41	105.9
2003	MRIP	SC	832	81.5
2006	MRIP	SC	0	
2007	MRIP	SC	0	
2008	MRIP	SC	4,904	103.8
2009	MRIP	SC	175	97.2
2010	MRIP	SC	6,082	66.9
2012	MRIP	SC	7,954	92.1
2013	MRIP	SC	1,640	64.7
2014	MRIP	SC	8,255	65.6
2015	MRIP	SC	3,335	62.1
2016	MRIP	SC	5,794	81.9
2017	MRIP	SC	12,939	60.5
2018	MRIP	SC	14,021	81.7
2019	MRIP	SC	73,440	84.2
2020	MRIP	SC	86,779	71.0
2021	MRIP	SC	58,204	61.5
2022	MRIP	SC	44,165	52.6
2023	MRIP	SC	40,487	62.2
2024	MRIP	SC	65,779	53.9
2025	MRIP	SC	60,861	28.1

Table 10. MRIP annual PR discard estimates (B2) of red snapper in numbers of fish for **North Carolina** for the period 1981-2025. Table cells marked in yellow indicate estimates with PSE values >30% but <50% (CAUTION). Cells marked in red indicate estimates with PSE values >50% (DO NOT USE). No anglers discarding red snapper were intercepted in NC until 1992.

- Summary of findings: of the 20 years of available data, 3 (15%) have PSE's above 30% (CAUTION) and 17 (85%) have PSE estimates >50% (DO NOT USE). Five years have no data at all.

Year	Survey	State	Releases (no. of fish)	PSE
1992	MRIP	NC	247	101.0

Year	Survey	State	Releases (no. of fish)	PSE
1993	MRIP	NC	1,400	97.1
1994	MRIP	NC	0	
1996	MRIP	NC	63	98.4
1998	MRIP	NC	34	100.5
2000	MRIP	NC	1,347	100.6
2001	MRIP	NC	0	
2004	MRIP	NC	0	
2005	MRIP	NC	0	
2006	MRIP	NC	289	100.8
2009	MRIP	NC	0	
2010	MRIP	NC	1,403	79.9
2012	MRIP	NC	186	101.6
2013	MRIP	NC	342	105.5
2014	MRIP	NC	4,858	89.1
2015	MRIP	NC	2,483	59.2
2016	MRIP	NC	14,356	52.7
2017	MRIP	NC	1,399	56.0
2019	MRIP	NC	5,808	84.0
2020	MRIP	NC	11,314	51.8
2021	MRIP	NC	10,585	50.0
2022	MRIP	NC	36,412	59.3
2023	MRIP	NC	50,961	44.3
2024	MRIP	NC	53,474	61.9
2025	MRIP	NC	41,957	40.6

Estimates presented in tables 6-8 above highlight the sporadic number of records on annual discard (B2) estimates for the states of NC, SC, and GA for most of the period 1981-1993. A query for B2 estimates for each of the South Atlantic states for the period 1981-1992 (Table 9) confirms that during this period most of the discard estimates come from Florida, with some discards coming from GA in 1991 and some from NC in 1992.

Table 11. MRIP annual PR discard estimates (B2) of red snapper in numbers of fish for **FL, NC, SC, and GA** for the period 1981-1992. Table cells marked in yellow indicate estimates with PSE values >30% but <50% (CAUTION). Cells marked in red indicate estimates with PSE values >50% (DO NOT USE).

- Summary of findings: none of the discard estimates for the period 1981-1992 meet the standard of having PSE's <30% (CAUTION) and most of them have PSE's >50% (DO NOT USE).

Year	Survey	State	Releases (no. of fish)	PSE
1984	MRIP	FL	5,831	99.6
1985	MRIP	FL	27,655	75.9
1987	MRIP	FL	52,154	72.3
1988	MRIP	FL	23,959	46.7
1989	MRIP	FL	12,045	50.1
1991	MRIP	FL	22,081	57.0
1991	MRIP	GA	552	106.1
1992	MRIP	FL	12,040	47.3
1992	MRIP	NC	247	101.0

SRFS Estimates

Table 12. SRFS annual landings estimates of red snapper in numbers of fish for the five years SRFS estimates are available for east Florida (2021-2025). Table cells marked in yellow indicate estimates with PSE values >30% but <50% (CAUTION). Cells marked in red indicate estimates with PSE values >50% (DO NOT USE).

- Summary of findings: of the 5 years of data available, three (60%) of the landings estimates meet minimal data quality standards (PSE values <30%) and only one year (20%) has a PSE value >50% (DO NOT USE).

Year	Survey	State	Landings (no. of fish)	PSE
2021	SRFS	FL	64,850	24.5
2022	SRFS	FL	33,623	33.3
2023	SRFS	FL	84,453	21.6
2024	SRFS	FL	74,644	25.8
2025	SRFS	FL	1,053	72.7

Table 13. SRFS annual discard estimates of red snapper in numbers of fish for the five years SRFS estimates are available for east Florida (2021-2025). Table cells marked in yellow indicate estimates with PSE values >30% but <50% (CAUTION). Cells marked in red indicate estimates with PSE values >50% (DO NOT USE).

- Summary of findings: all five years (100%) of the discard estimates meet minimal data quality standards (PSE values <30%).

Year	Survey	State	Releases (no. of fish)	PSE
2021	SRFS	FL	1,295,587	19.2
2022	SRFS	FL	875,469	24.6
2023	SRFS	FL	743,050	12.3
2024	SRFS	FL	1,016,674	11.3
2025	SRFS	FL	622,616	13.9

Comparing the SRFS and MRIP annual estimates of red snapper landings and discards in east Florida for the same 2021-2025 time period, we find that MRIP landings estimates (A+B1) do not meet the minimum standards in any of those years, and that 60% of the MRIP discard estimates meet the standards.

Discussion

Now that the revised and updated MRIP-FES estimates have been released and the terminal year of the SEDAR 90 stock assessment has been updated to 2025, FWC-FWRI agrees with the SEDAR 90 Assessment Panel that a reevaluation of the DW recommendation to use SRFS for Florida's PR-mode data for this assessment is beneficial. The problem, as seen in the sections above, is finding enough MRIP estimates that meet minimum data standards. Based on the three evaluation criteria proposed by this working paper we feel that although both MRIP and SRFS have pluses and minuses, SRFS offers significant benefits for rare-event, reef fisheries like South Atlantic red snapper. We therefore recommend that SRFS be used for the PR mode for SEDAR 90. This recommendation is based on the following points.

(1) Survey Review and Certification

Both MRIP and SRFS have been reviewed by a panel of independent experts and have been certified by the MRIP official survey certification process. This criterion has been met by both surveys.

(2) Survey Suitability for the Sampling Domain in Question

Although both surveys have pluses and minuses as far as coverage is concerned, SRFS offers clear advantages for a fisheries with the characteristics of South Atlantic red snapper's. MRIP was designed as a broad, general-purpose survey of recreational fishing across multiple species and fisheries rather than a specialized monitoring program, and that creates particular challenges for fisheries like South Atlantic red snapper. Because directed red snapper seasons have often been short and recreational encounters can be concentrated in relatively narrow geographic areas and time periods—about 90-95% of the catch happens in the EEZ, and about 90% of those happen in Florida—the number of red snapper trips and catches intercepted by

MRIP is small relative to the overall survey sampling frame. As a result, the vast majority of landings and discard estimates have large measures of uncertainty that do not meet MRIP's minimum data standards (Tables 3-11) and, therefore, are not considered adequate for providing reliable data for the South Atlantic red snapper PR-mode fisheries.

This assessment of the inadequacy of MRIP for providing sufficiently precise recreational data for assessment and management of Council-managed species is consistent with conclusions of the National Academies study commissioned by NOAA Fisheries (NASEM, 2021). However, these limitations do not necessarily indicate that MRIP is biased or unsuitable for recreational fisheries generally. Rather, they can make it difficult for MRIP, on its own, to provide the level of precision needed for management of a fishery such as South Atlantic red snapper.

(3) Precision of Estimates as they Relate to MRIP Data Standards

Based on the precision of estimates (Tables 3-11) it is difficult to see how MRIP could be considered adequate for SEDAR 90. The vast majority of annual estimates do not meet the minimum standard of having PSE values <30%. Further, depending on the geographic scale of the estimation domain—i.e., for the South Atlantic region as a whole or by individual states—the vast majority of estimates have PSEs that are either >30% or >50%, or are missing altogether. For example, no red snapper MRIP PR-mode data is available for the states of NC, SC, and GA before 1992. All the red snapper MRIP PR-mode data (i.e., landings and discards) for the period 1981 to 1991 comes from Florida.

This poor level of precision—i.e., PSEs >30%—in MRIP South Atlantic red snapper recreational data is consistent with the results presented in the SEDAR90-DW-03 working paper (Nuttall, 2025). For example, Table 5 in that working paper shows that even when the data for all modes and all data sources (i.e., PR-mode and charter-for-hire) are combined, the vast majority of MRIP red snapper landings (A+B1) and discards (B2) have PSEs >30% or >50%. For the 44 years of data (1981-2024) shown in Table 5, only 12 years (27%) of landings have PSEs <30% and only 16 years (36%) have discard estimates with PSEs <30%.

The challenges MRIP faces with precision of estimates are not new. The Atlantic Coastal Cooperative Statistics Program (ACCSP) and MRIP jointly held the *ACCSP Recreational PSE (Percent Standard Error) Workshop* on September 23-24, 2014, in Hanover, MD⁶, specifically to discuss ways to address how uncertainty in recreational fishing data was challenging assessment and management of a variety of fisheries along the Atlantic coast.

Similarly, the Governmental Accountability Office (GAO) released a report in 2015 (GAO, 2015)⁷ focused on highlighting a suite of challenges facing US recreational fisheries data collection programs, including low levels of precision. GAO's central recommendation was not to impose a specific numerical precision standard, such as a particular PSE threshold, but to

⁶ The workshop report can be downloaded here: https://www.accsp.org/wp-content/uploads/PSE_Workshop_Proceedings_FINAL_WEB-1.pdf?utm_source=chatgpt.com

⁷ The GAO report can be downloaded here: <https://www.gao.gov/assets/gao-16-131.pdf>

require NMFS OS&T to develop a comprehensive strategy for improving recreational fisheries data collection. That strategy should identify regional data needs—including the required levels of precision and timeliness of survey estimates—assess whether existing programs meet those needs, identify data gaps, and prioritize improvements and resources accordingly. GAO noted that more precise estimates can be especially important for management decisions involving fisheries—like South Atlantic red snapper—characterized by short fishing seasons and managed with annual catch limits (ACLs)—but also recognized that achieving greater precision may require additional sampling and resources and therefore involves trade-offs with other data-collection priorities.

More recently, based on solicited input from state and federal partners along the entire Atlantic seaboard, the *2023-2027 ACCSP Atlantic Recreational Implementation Plan*⁸ identified the following prioritized list of data needs for the Atlantic Regional MRIP Implementation Plan:

1. Improved precision (PSE) and presentation of MRIP estimates
2. Comprehensive for-hire data collection and monitoring
3. Improved recreational fishery discard and release data
4. Improved timeliness of MRIP recreational catch and harvest estimates
5. Expanded Biological sampling for recreational fisheries
6. Improved in-season monitoring

Although the actual SRFS estimates (i.e., not including pre-2021 MRIP estimates calibrated to SRFS units) are available just for the period 2021-2025 they fare much better in meeting precision standards (Tables 12 and 13). A principal advantage of using SRFS private recreational red snapper data for Florida is that SRFS was specifically designed to sample reef-fish fisheries, rather than recreational fisheries generally. By design, SRFS supplements dockside sampling at sites with a higher probability of intercepting reef-fish anglers, resulting in substantially more red snapper observations—particularly discards—than are typically obtained through MRIP. Together, factors like the more targeted sampling frame, larger effective sample sizes for red snapper, and greater temporal resolution provide the potential for more precise estimates of private recreational catch and effort for use in SEDAR 90.

Obviously, the fact that SRFS is not conducted in NC, SC, and GA creates a problem in terms of maintaining a consistent “currency” across South Atlantic states. The SEDAR 90 DW Recreational Fisheries panel recommended the use of SRFS for the Florida PR mode and MRIP-FES for the NC, SC, and GA private mode. However, since the conclusion of the DW, consideration has been given to using the ratios of catch from MRIP-FES and SRFS estimates in Florida to generate imputed estimates for NC, SC, and GA. This provides a time series across the South Atlantic states for PR-mode recreational fisheries data in SRFS units.

⁸ This document can be downloaded here: https://www.accsp.org/wp-content/uploads/2024/01/ACCSP-Atlantic-Recreational-Implementation-Plan_2023_2027.pdf

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