Recreational Effort, Catch and Biological Sampling in Florida During the 2020 South Atlantic Red Snapper Season

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Executive Summary

Landings in the recreational fishery for Red Snapper *Lutjanus campechanus* in the southeastern U.S. Atlantic have historically been monitored through a general survey of all saltwater fishing called the Marine Recreational Information Program, or MRIP. A majority of landings estimated through the MRIP survey were attributed to the Atlantic coast of Florida. However, the recreational fishery has been managed with an annual harvest season ranging from 0 to 9 days since 2010. In order to improve precision of fishing effort and harvest estimates over such short seasons, the state of Florida has developed specialized survey methods (Sauls et al. 2017).

This report summarizes methods and final results for specialized surveys of the private boat and charter segments of the recreational fishery operating from the east coast of Florida during the 2020 recreational season for Red Snapper in the South Atlantic. Sampling activities were conducted over two weekends in July (Friday through Sunday, July 10-12 and Friday, July 17) when recreational harvest of Red Snapper was open. Prior to the season opening, a paper log-sheet was also mailed to charter vessel operators based in Florida that possess a federal permit for South Atlantic Snapper-Grouper, which was followed up the week after the season closed with telephone contacts to collect information specifically on Red Snapper fishing effort and catch. Final estimates are provided for both the private boat and charter segments of the recreational fishery.

During the 2020 season, weather conditions were favorable for offshore fishing. High levels of boating activity were observed throughout the study region and an estimated 45,759 angler trips (SE ±8,631) targeted Red Snapper over the four-day season, despite the ongoing threat of the coronavirus pandemic. Field staff implemented several protocols to limit close or prolonged interactions with the public to reduce the potential for viral spread between field staff and the public. A total of 869 private boat parties were interviewed upon returning from trips in the ocean, and 81.7% reported fishing for Red Snapper. An estimated 30,921 (SE±5,820) Red Snapper were harvested over the four-days, and the mean length and weight of fish sampled from private boat trips was 563.00 mm (±5.53) midline length and 3.74 kg (±0.096).

For the federally permitted charter fleet, a total of 529 charter vessels in the MRIP For-Hire Survey Frame that matched a South Atlantic Snapper-Grouper permit were included in the sample frame, and 392 were selected for this survey. Of those selected, 72.4% responded to the dual mail / telephone survey. More than a quarter of the responses (27.8%), came from log sheets that were returned via mail. An estimated 2,900 (±216) Red Snapper were harvested during 2,783 (±200) angler trips from charter vessels over the four-day season. The majority (91.2%) of charter landings were from northeast Florida (Martin County north to the Georgia border). Captain and crew on for-hire vessels may retain the recreational bag limit, and the mean CPUE was 1.08 (±0.03) fish harvested per angler trip in northeast Florida and 0.79 (±0.08) in the Florida Keys. Red Snapper sampled from charter boats averaged 600.95 mm (±16.851) and 4.37 kg (±0.295).

The Red Snapper harvest season also provided an opportunity to collect fishery dependent biological samples, including length, weight and age structures. During 2020, biological data was collected from 664 Red Snapper sampled from private boats and 74 sampled from charter boats.

Section 1. Private Mode

Methods

The survey design and estimation methods for private boat mode described below were developed over three prior Red Snapper seasons. Details for how methods were tested and validated, as well as results from the first three years, are described by Sauls et al. (2017).

Sample Design — Off the Atlantic coast of peninsular Florida, recreational boaters must pass through one of nine navigable inlets to access Red Snapper fishing grounds in the Exclusive Economic Zone (Figure 1.1). Recreational boat traffic through each of these egress points was monitored during the season. Each day that an inlet was sampled, boat traffic was observed during one of two time periods. The a.m. period began during local sunrise time (6:30 a.m.) and ended at 1:29 p.m., and the p.m. period began at 1:30 pm and ended at local sunset time. Each inlet was randomly sampled at least two separate days during one a.m. and one p.m. period each weekend. This sample design ensured that recreational boat activity across the region was observed throughout each day, and that variable fishing effort in response to localized weather and offshore conditions across weekends was measured and accounted for. Matanzas Inlet is a minor egress point and was only monitored one day each weekend at the same time as the nearest major inlet (St. Augustine). A ratio adjustment was calculated and applied to St. Augustine to account for the small amount of additional effort through Matanzas Inlet.

Launch sites for private recreational boats were randomly selected for a complementary access point intercept survey over each weekend. The purpose of the intercept survey was to interview parties as they return from boating trips to determine whether they were fishing for Red Snapper, measure catch rates, and collect biological samples from harvested fish. The intercept survey also provided data that were necessary for accurately estimating fishing effort. During an assignment, each party that returned from a recreational boat trip was interviewed to determine the proportion that exited through inlets for the purpose of targeting Red Snapper and the proportion that departed before sunrise and were not accounted for in inlet boat count survey. Field procedures for conducting trip interviews with intercepted vessels are described in reports for previous years (Sauls et al. 2013, 2014).

Estimation —

The following steps were used to estimate total fishing effort:

1) The numbers of recreational boats observed exiting through each inlet during daylight hours was expanded to generate an unadjusted seasonal estimate of boat trips in the Atlantic Ocean across all inlets;

2) The estimated number of boat trips taken by federally permitted charter vessels (see next section) was subtracted;

3) The remainder was multiplied by the proportion of private recreational boat parties and non-federally permitted charter parties that reported targeting Red Snapper during intercept survey interviews;

4) The estimated boat trips that targeted Red Snapper was adjusted to account for additional boat parties that reported exiting through inlets before sunrise to target Red Snapper; and

5) The adjusted boat trips that targeted Red Snapper was multiplied times the mean number of anglers per intercepted boat party to get the total estimated number of angler trips targeting Red Snapper.

Landings are estimated by multiplying total effort by the mean CPUE (catch per angler trip) estimated from intercept data. Intercept data are weighted proportional to fishing effort across each inlet. A description of calculations is provided in prior years' reports and in Sauls et. al 2017.

COVID-19 Safety Measures

In response to the ongoing threat of the COVID-19 virus, additional procedures were implemented to ensure safe interactions between field biologists and the public, including wearing face coverings and maintaining a minimum distance of 6-feet during angler interviews. The intercept survey questionnaire was also shortened to reduce the time it took to conduct each interview and reduce exposure. Questions that were dropped from the interview in 2020 include hours fished, number of Red Snapper discarded, and methods used to release Red Snapper (surface, venting, descended). Hours fished is not used in the CPUE calculation and eliminating this question did not impact estimation. Discard estimates in-season are not used in stock assessments because MRIP provides year-round estimates for the magnitude of discards.

Results

Fishing effort in 2020 was comparable to recent years and was not impacted by COVID-19 (Figure 1.2). Overall, weather was favorable for offshore fishing across the four days that the season was open in 2020. A total estimated 30,921 (SE $\pm$5,820) Red Snapper were harvested by private boat anglers (Table 1.2), and discards were not estimated due to the shortened questionnaire in 2020. Overall catch per unit effort (CPUE) for landed fish was 0.676 (SE $\pm$0.019, Table 1.2) and has not varied significantly across years (Figure 1.3). Landed fish averaged 563.00 mm fork length (SE $\pm$5.53) and 3.74 kg (SE $\pm$0.096).

References

Sauls, B. J., R.P. Cody, and A.J. Strelcheck. 2017. Survey methods for estimating Red Snapper landings in a high-effort recreational fishery managed with a small annual catch limit. North American Journal of Fisheries Management 37:302-313.

Table 1.1 Effort estimates for private boat mode ±SE.

Inlet	Number of boat parties intercepted	Mean anglers per party	Proportion of trips targeting Red Snapper	Proportion of trips departing after sunrise	Targeted boat trips	Targeted angler trips
Cumberland	102	3.74±0.152	0.923±0.033	0.778±0.044	808±387	3,024±1,452
Mayport	204	3.66±0.105	0.851±0.035	0.577±0.037	2,480±1,057	9,064±3,873
St Augustine	83	4.19±0.252	0.837±0.053	0.623±0.058	1,689±609	7,068±2,580
Ponce Inlet	137	3.85±0.129	0.804±0.053	0.468±0.045	3,222±1,356	12,419±5,242
Port Canaveral	173	3.83±0.132	0.806±0.050	0.391±0.040	2,785±1,226	10,680±4,711
Sebastian Inlet	35	2.97±0.224	0.643±0.128	0.533±0.091	791±290	2,348±876
Fort Pierce	64	3.36±0.222	0.388±0.070	0.821±0.072	234±143	785±481
St. Lucie	28	2.25±0.217	0.211±0.094	1.000±0.000	165±109	371±247
Overall	826	3.75±0.060	0.757±0.021	0.557±0.019	12,173±2,258	45,759±8,631

Table 1.2. Mean CPUE (landings per angler trip) and estimated total landings ±SE.

Inlet	CPUE	Landings (numbers of fish)	Mean weight (kg)	Landings (kg)
Cumberland	0.795 (±0.045)	2,404 (±1,161)		
Mayport	0.644 (±0.031)	5,834 (±2,505)		
St Augustine	0.766 (±0.051)	5,415 (±2,005)		
Ponce	0.655 (±0.045)	8,133 (±3,470)		
Port Canaveral	0.657 (±0.035)	7,018 (±3,114)		
Sebastian	0.730 (±0.067)	1,715 (±656)		
Fort Pierce	0.511 (±0.083)	401 (±251)		
St. Lucie	0.000 (±0)	0 (±0)		
Overall	0.676 (±0.019)	30,921 (±5,820)	3.74(±0.096)	115,645(±21,767)
c.v.	0.028	0.188	0.026	0.188

Table 1.3 Season length and total catch estimates for private boat mode expressed in numbers of Red Snapper during 2020, compared to previous season.

Year	Month(s)	Number of days	Estimated harvest $\hat{C}_{harv}(\pm s.e.)$	Estimated discards $\hat{C}_{disc}(\pm s.e.)$
2020	July	4	30,921 (±5,820)	Not available
2019	July	5	37,750 (±6,292)	56,648 (±10,163)
2018	August	6	30,050 (±6,256)	41,660 (±10,057)
2017	Nov.-Dec.	9	5,390 (±475)	4,331 (±561)
2014	July	8	22,013 (±2,782)	9,755 (±1,741)
2013	August	3	6,999 (±1,321)	5,033 (±1,512)
2012	Sept.	6	11,136 (±1,734)	17,587 (±9,031)

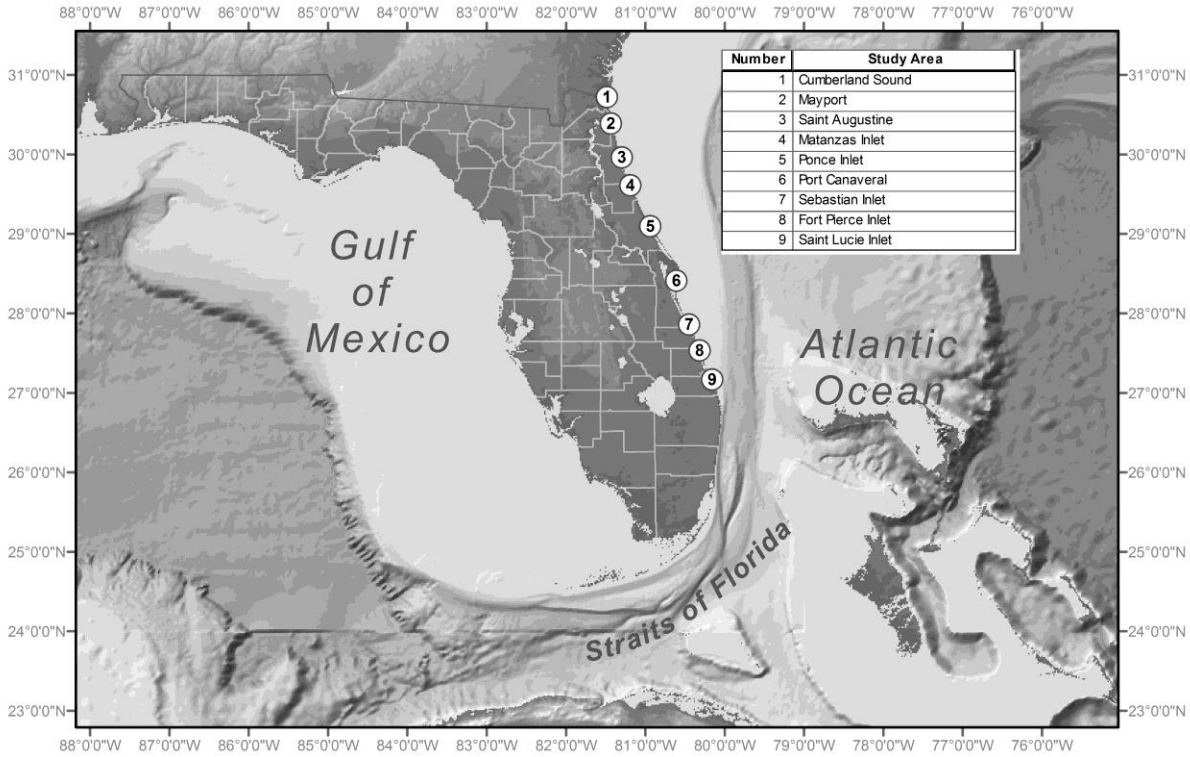

Figure 1.1. Inlets included in study area.

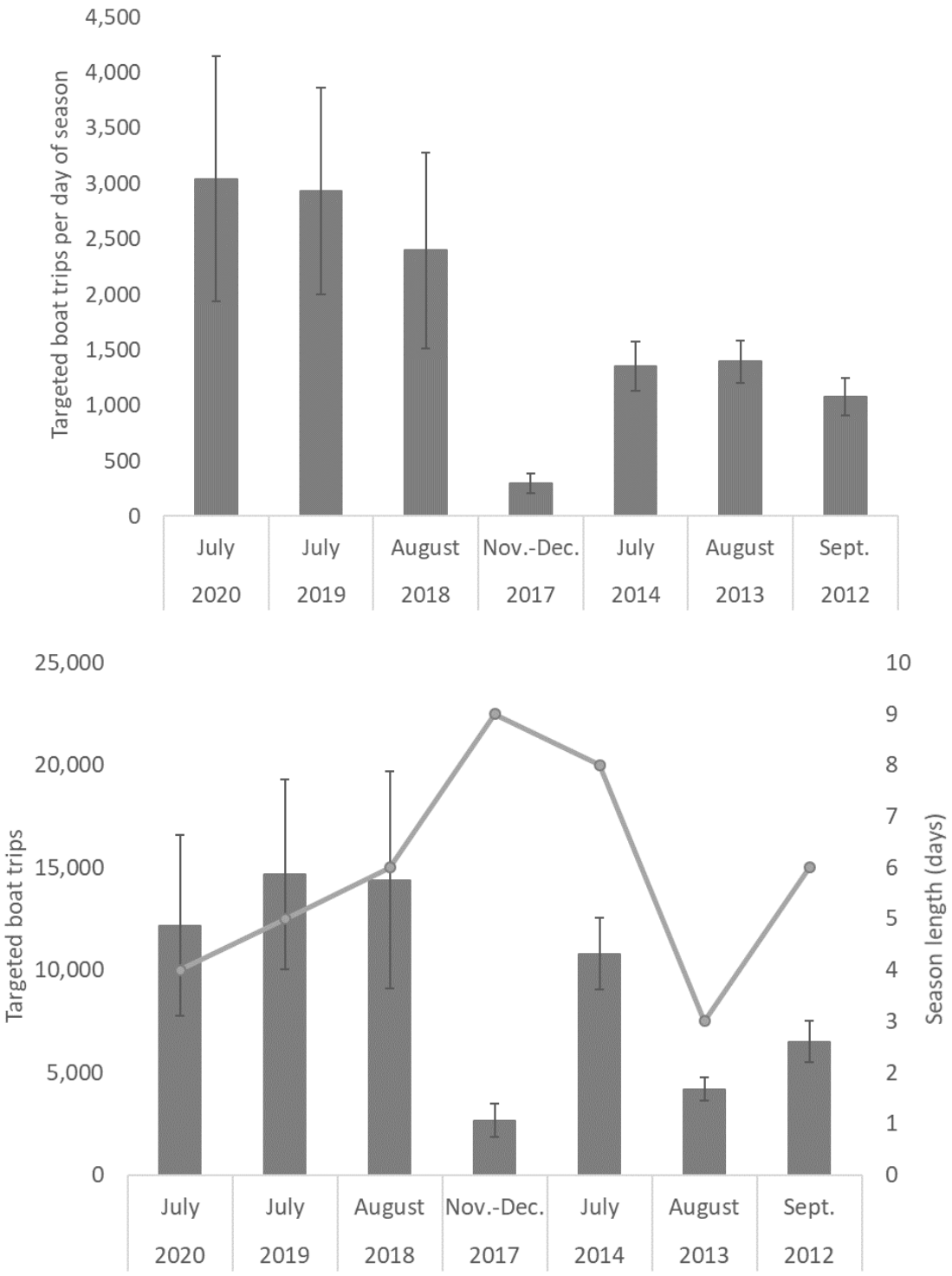

Figure 1.2 Mean boat parties per day that targeted Red Snapper during the harvest season (top panel), and total estimated boat trips with season length as a second axis (bottom panel). Effort has increased in the most recent years that the survey was conducted (2018-2020). Low effort in 2017 was attributed to poor weather conditions for offshore fishing in November and December.

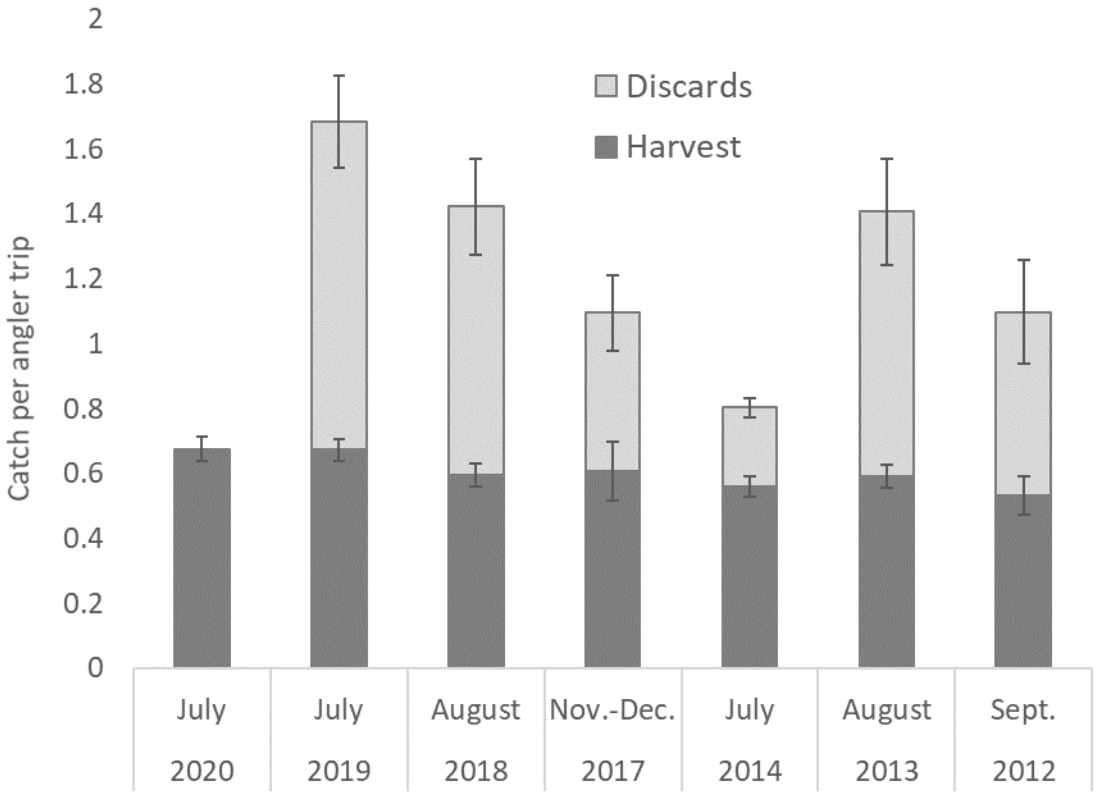

Figure 1.3. Mean catch per unit effort across years. Numbers of fish harvested per angler has remained steady and is constrained by the one fish per person bag limit. Discard rates were not estimated this year, as a result of a shorter survey questionnaire that eliminated discarding questions to reduce interview lengths while sampling during the ongoing COVID-19 pandemic.

Section 2: Charter Mode

Methods

Mail / Telephone Survey —The FWC maintains a list of active charter vessels that is used as the sample frame from which the MRIP For-Hire Telephone Survey (FHTS) weekly draw (10% of active vessels) is selected. Charter vessels in the wave 4, 2020, FHTS vessel list were matched to a list of charter vessels with a valid federal permit to harvest Snapper-Grouper species in the South Atlantic. This permit is required to harvest Red Snapper from the EEZ adjacent to the east coast of Florida. Charter vessels that do not possess a federal permit are more effectively monitored through the MRIP survey, since they may harvest legal sized Red Snapper year-round in state waters. However, this is rare due to the 20" size limit and distribution of larger fish farther offshore, outside state jurisdiction (particularly in northeast Florida). All vessels in the FHTS sample frame with a South Atlantic Snapper-Grouper permit were selected for this survey, with the exception of vessels that were randomly selected by MRIP to participate in the FHTS during the weeks the South Atlantic Red Snapper season was open.

The week before the July fishing season opened, each selected vessel was sent a letter describing the intent of FWC staff to collect catch and effort data for charter trips targeting or harvesting Red Snapper (Appendix 1). The letter explained that captains could participate in the survey by completing and returning the enclosed log sheet or, if no log sheet was received, FWC staff would attempt to contact them by telephone at the end of the Red Snapper season. The log sheets were printed on waterproof paper to encourage captains to bring the log sheet underway to improve the accuracy of responses, and a pre-paid postage envelope was also provided to encourage prompt return of the log sheet. The logs provided space to record trip and catch level data for up to three trips that targeted Red Snapper on each day of the South Atlantic season, including: number of anglers, number of passengers, trip origin (state and county), distance from shore and depth fished, dock to dock hours, hours fished, and numbers of Red Snapper harvested and released (Appendix 2). Each vessel representative was called up to five times, or until a successful contact was made or their mailed log sheet was received. Vessels that did not return the log sheet or that could not be contacted by the fifth call attempt were marked as non-contacts for the fishing season.

Catch and Effort Estimation – Survey responses were used to estimate the total number of charter boat trips that targeted Red Snapper, charter angler trips that targeted Red Snapper, and numbers of fish harvested and discarded by all active federally permitted charter vessels during the July 2019 South Atlantic Red Snapper fishing season. The formula used to calculate the total boat trips, angler trips, and numbers of fish harvested and released for each region and month is:

$$\hat{Y} = \sum_{i=1}^{n} w_h y_{h,i} \qquad (2.1)$$

Where $y_{h,i}$ corresponds with the total number of boat trips, anglers, or fish reported by respondent *i* in region *h* during the two weekends when Red Snapper harvest was open, and w_h is a sample weight, calculated as:

$$W_h = {}^{N_h}/_{n_h} \qquad (2.2)$$

Where N_h is the total number of federally permitted active charter vessels in region *h*, and n_h is the total number of vessels in region *h* that responded to the survey. The SAS procedure, PROC SURVEYMEANS, was used for this estimation (Appendix 3), and the variance is calculated using the Taylor Series method (SAS Institute Inc., 2008).

The northeast region included counties on the Atlantic coast of Florida north of Palm Beach County, where Red Snapper are most likely to be targeted, the southeast region included southern counties where the species is rarely encountered, and Monroe County was a separate region (Table 2.1). Charter vessels on the Gulf coast of Florida that carry the S. Atlantic Snapper – Grouper permit were also surveyed as a separate region during the July fishery opening to determine if any participate in the short seasonal opening (Table 2.1).

Estimated catch and effort were not adjusted for permitted vessels that are not included in the survey because they were not identified as active charter vessels in the FHTS frame. However, any such vessels also would have been counted as private boats during inlet boat counts (described in Section 1 above). Thus, it would be inappropriate to also account for under-coverage in the charter survey. Charter fishing effort and catch reported by respondents in this survey were not independently validated in the field.

Undercoverage Adjustment – Off-frame charter vessels were encountered during surveys described in section 1, and data collected from these vessels was included in expansions for total effort and catch in the private boat fishery. Thus, no adjustments for under-coverage were necessary in the mail and phone survey of federally permitted charter vessels in the NE region. In the Keys, where private anglers rarely target Red Snapper in the EEZ, no special field surveys are conducted and no information on off-frame charter vessels is available. However, the charter fishery in the Keys is a minor portion of total recreational landings for Red Snapper on the east coast of Florida, and any under-coverage is expected to be small.

Results

The 2020 South Atlantic Red Snapper season marked the fourth year that a dual mail / phone survey was used to collect trip level data from the federal for-hire fleet. The survey was distributed to three-quarters of the known, active charter vessels with a valid federal South Atlantic Snapper-Grouper permit (Table 2.1). The overall response rate for the survey remains high at 72.4%, but the response rate from southeast Florida has declined each year since the dual survey was implemented in 2017 (Table 2.2). This region contains only 12% of the population surveyed and zero landings of Red Snapper, but a higher response rate will guarantee that the trends seen from the respondents are representative of fishing activity in the southeast Florida region. Outreach efforts made to verify contact information for captains before the start of the season may help to improve the final status of call attempts, both by reducing the number of attempts made and the number of captains we are unable to contact (Figure 2.1). All other regions of Florida have response rates at or above 70% (Table 2.3). The use of the dual mail survey continues to contribute to the high overall response rates associated with the survey, with 27.8% of the responses from the mail surveys (Table 2.3).

Before generating catch and effort estimates, the length frequency distribution of vessel lengths of the full charter vessel population was compared to the vessel lengths of the

respondents and participants to determine if the latter groups are representative of the full charter population. The vessel length distributions of the full charter population and respondents appear to have similar shape and are likely representative (Figure 2.2). The only vessel size group that is not represented in the survey respondents, is those in the 60 ft vessel length bin, but these do not represent a large proportion of the charter population surveyed.

Estimates of boat trips, angler trips, harvest, and discards were generated for northeast Florida (Nassau to Martin Counties) and the Florida Keys (Monroe County). No Red Snapper trips were reported by respondents from southeast Florida (Palm Beach to Miami-Dade) or west Florida (Escambia to Collier Counties). During the 2020 season, an estimated 2,900 (±216) Red Snapper were harvested during 592 (±35) boat trips. Charter fishing effort and landings in northeast Florida continue to account for the majority of Red Snapper trips and harvest, 88.4% of angler trips and 91.2% of fish harvested (Table 2.4).

Each vessel provided trip level information about the depth and distance from shore where fishing occurred during charter trips (Table 2.5). Trip details from charter vessels operating in northeast Florida reported an average fishing depth of 33.3 (±15.8) meters and distance from shore of 22.2 (±12.3) miles. The 2020 survey yielded the most trip reports from the Florida Keys, 10. These trip reports indicate that charter trips occurred closer to shore (12.7 ±13.6 miles from shore), but deeper depths (69.1 ±25.0 meters) than northeast Florida Trips.

Table 2.1 Regional groupings of coastal counties used for generating catch and effort estimates.

Region	Coastal Counties
Northeast	Nassau, Duval, Clay, St Johns, Flagler, Volusia, Brevard, St. Lucie, Martin
Southeast	Palm Beach, Broward, Miami-Dade
Keys	Monroe
West Florida	Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, Franklin, Wakulla, Taylor, Dixie, Levy, Citrus, Hernando, Pasco, Pinellas, Hillsborough, Manatee, Sarasota, Charlotte, Lee, Collier

Table 2.2 Survey frame, summary of response via mail and phone, and response rates by region.

Region	Charter Vessels	Total Selected	Mail Responses	Phone Responses	Response Rate
Northeast	178	130	25	70	0.731
Southeast	63	47	3	18	0.447
Keys	165	127	20	70	0.709
West Florida	123	88	31	47	0.886
Overall	529	392	79	205	0.724

Table 2.3 Table of response rates from 2017-2020, the time frame that the combined mail-telephone survey has been conducted.

Year	Northeast	Southeast	Keys	West Florida	Overall
2020	0.731	0.447	0.709	0.886	*0.724*
2019	0.688	0.683	0.691	0.907	*0.740*
2018	0.703	0.816	0.777	0.902	*0.792*
2017	0.846	0.763	0.768	0.875	*0.803*

Table 2.4 Summary of effort and catch estimates for the federally permitted charter fleet from Northeast Florida and the Florida Keys, for the 2020 South Atlantic Red Snapper season.

Variable	Region	Estimate	S.E.	Var	C.V.
Boat Trips	Northeast	517	33	1069	0.063
	Florida Keys	75	13	164	0.170
	Overall	*592*	*35*	*1233*	*0.059*
Angler Trips	Northeast	2460	192	36875	0.078
	Florida Keys	323	56	3118	0.173
	Overall	*2783*	*200*	*39994*	*0.072*
Harvest	Northeast	2646	210	44281	0.080
	Florida Keys	255	48	2274	0.187
	Overall	*2900*	*216*	*46555*	*0.074*
CPUE	Northeast	1.075	0.027	1.022	1.129
	Florida Keys	0.790	0.078	0.635	0.944
	Overall	*1.042*	*0.027*	*0.988*	*1.095*
Discards	Northeast	4799	612	373992	0.127
	Florida Keys	108	39	1518	0.360
	Overall	*4907*	*613*	*375510*	*0.125*

Table 2.5 Summary of reported depth and distance from shore for charter fishing trips taken during the 2020 South Atlantic Red Snapper fishing season.

Region	Boat Trips	Depth (m)		Distance From Shore (mi)	
		Mean	*S.E.*	*Mean*	*S.E.*
Northeast	67	33.3	15.8	23.0	13.2
Keys	10	69.1	25.0	12.7	13.6
Overall	*77*	*39.3*	*22.1*	*21.3*	*13.7*

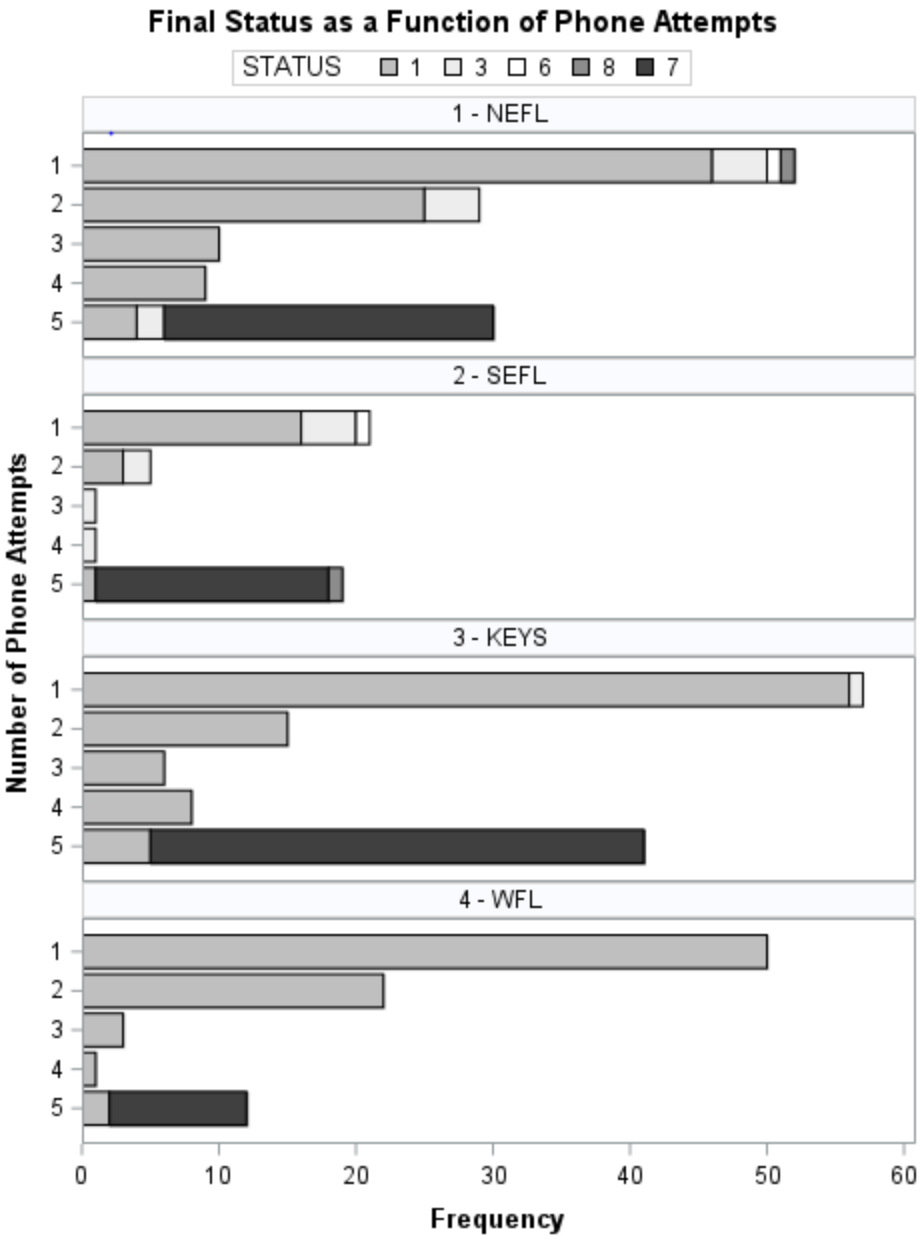

Figure 2.1 Frequency of attempted phone calls to federally permitted charter representatives, as a function of the status after the final call. Status Codes: 1=Complete interview, 2=Incomplete, but all key questions answered, 3=Refusal, 4=Language barrier, 5=Mid-Interview refusal, 6=Ineligible, 7=Unable to Contact, 8=Inactive.

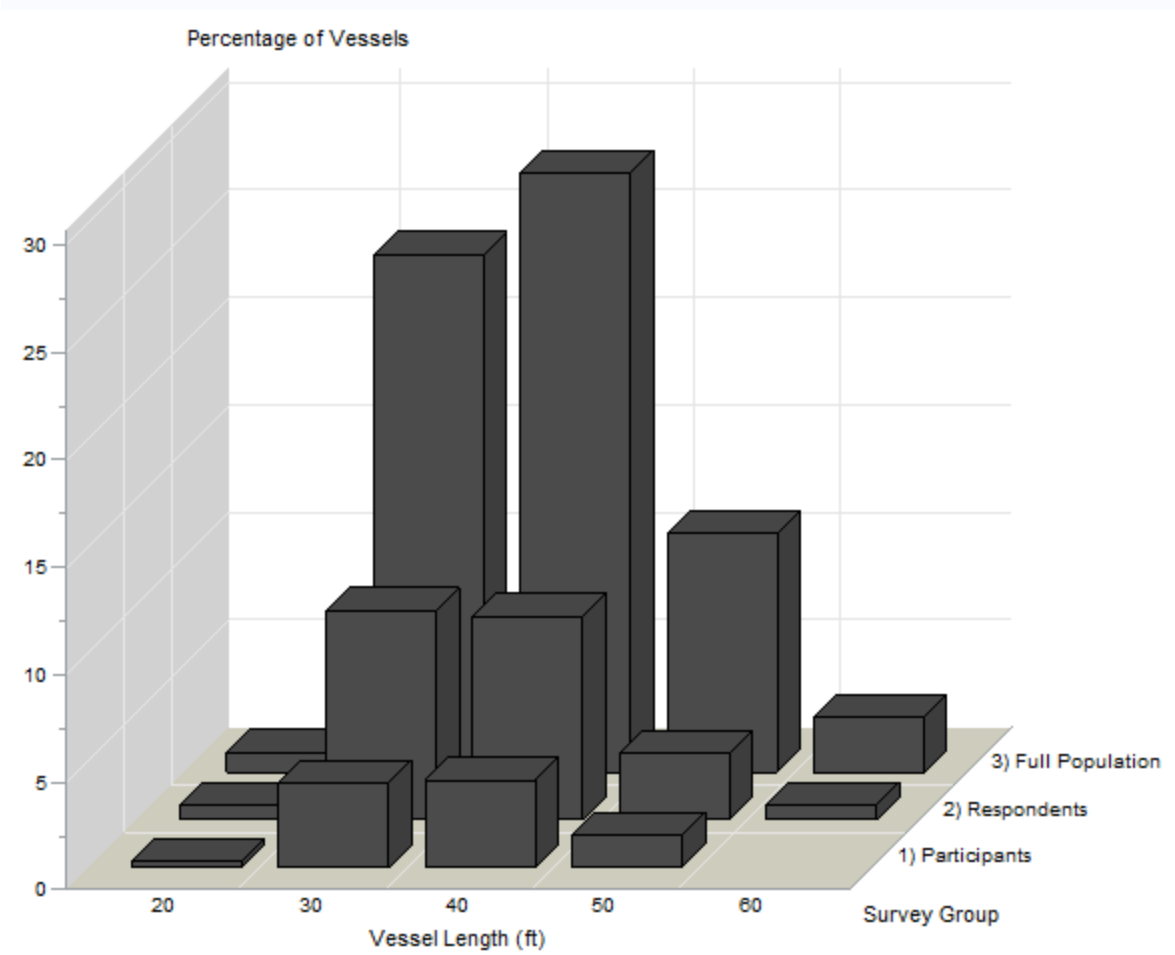

Figure 2.2 Percentage of vessels in 10 ft. length bins for three charter vessel groups: Full Population – Vessels with active federal South Atlantic Snapper -Grouper permits, Respondents – Vessels that responded to the survey, and Participants – Vessels that responded to the survey and conducted Red Snapper trips during the 2020 South Atlantic Red Snapper fishing season.

Section 3. Biological Sampling

Methods

The Red Snapper harvest season provides an opportunity to collect fishery dependent biological samples but was de-emphasized during the 2020 season to minimize the risk of spreading COVID-19 between field staff and the public. The collection of biological samples from private boat anglers occurred during the private boat intercept surveys. Biological samples from charter boats occurred primarily during private boat intercept surveys and some opportunistic sampling at lower pressure charter sites. High pressure sites were not sampled, as social distancing would not have been possible. Biosampling was not attempted during busier periods of intercept assignments. When biological samples were obtained, field staff used baskets and buckets to pass harvested fish between parties. These buckets were placed at a safe distance between parties, to maintain a physical distance while during the biosampling process. Special care was taken to continually sanitize hands and sampling equipment between interviews. During interviews with fishing parties, a maximum of three harvested fish were sampled (the largest, smallest and one intermediate sized fish) from each boat party that consented to the biological sampling portion of the survey. Biological samples were collected from both the private boat and charter boat fisheries(described above in Section 1). Each fish was measured (at midline in mm), weighed (kg), and one otolith was extracted. Priority was given to collecting the left otolith, and this was done to quickly process fish so they could be returned to anglers.

To account for varied sampling rates across inlets in the study area, sample weights were calculated. For private boat catch, sample weights were calculated for each inlet as:

$$W_h = \hat{C}_h / n_h \quad (3.1)$$

where $\hat{C}_h$ is the estimated landings for inlet h (reported in Table 1.3), and n is the number of fish sampled in inlet h (reported in results section below). Sample weights for each inlet were used to calculate an overall weighted mean for fork length (in mm) and kilograms for landed fish (using the survey means procedure in SAS). The sample weights for fish in each 1 cm length bin were also summed and divided by the sum of all sample weights (equal to total estimated landings) to calculate the weighted proportion of fish in each size category.

Red Snapper otoliths were assigned a unique sample number and associated data entered into the central database for fishery dependent biological samples housed at FWRI. Data are stored on a secure network that is routinely backed up. Otoliths collected during the 2020 season will be sectioned and aged in house at FWRI's Age and Growth Lab. Otoliths from fish sampled by the state of Georgia were also shipped to FWRI for processing. All resulting biological data will be shared with analysts from the NMFS Southeast Fisheries Science Center for the next SEDAR stock assessment update.

Results

Fewer measurements, weights and age structures were collected during intercept assignments as compared to prior years of the survey but were collected from both the private

boat and charter fisheries. Sample sizes for numbers of Red Snapper measured, weighed, and sampled for age and growth during 2020 are provided in Table 3.1. The mean length and weight for Red Snapper sampled from private boat trips and charter trips that were not included in the charter survey was 563.00 ± 5.53 mm fork length and 4.17 ±0.096 kg. The weighted length frequency of fish harvested by private boat anglers is shown in Figure 3.1. Red Snapper sampled from charter boats that were included in the charter survey averaged 600.95 mm (±16.851) and 4.37 kg (±0.295). The length frequency of fish harvested by charter boat anglers is also shown in Figure 3.1. The low sample size of biosamples collected from charter boat anglers reflects reduced sampling at high pressures sites.

Table 3.1. Numbers of fish sampled for length, weight and otoliths from private boat trips and charter boat trips. Numbers in parenthesis indicate additional fish sampled during intercept surveys from vessels that were not included in charter survey and were thus included in the catch estimate for private boats.

PRIVATE BOAT			
Inlet	Number of Length Samples	Number of Weight Samples	Number of Otolith Samples
Cumberland	34	32	34
Mayport	129	122	93
St. Augustine	84	79	79
Ponce Inlet	136	131	101
Port Canaveral	200	198	199
Sebastian Inlet	41	25	41
Fort Pierce Inlet	40	37	23
St. Lucie Inlet	0	0	0
Total	*664*	*624*	*570*
CHARTER BOAT			
Cumberland	6	6	6
Mayport	9	9	9
St. Augustine	37	37	37
Ponce Inlet	15	15	15
Port Canaveral	7	7	7
Sebastian Inlet	0	0	0
Fort Pierce Inlet	0	0	0
St. Lucie Inlet	0	0	0
Total	*74*	*74*	*74*

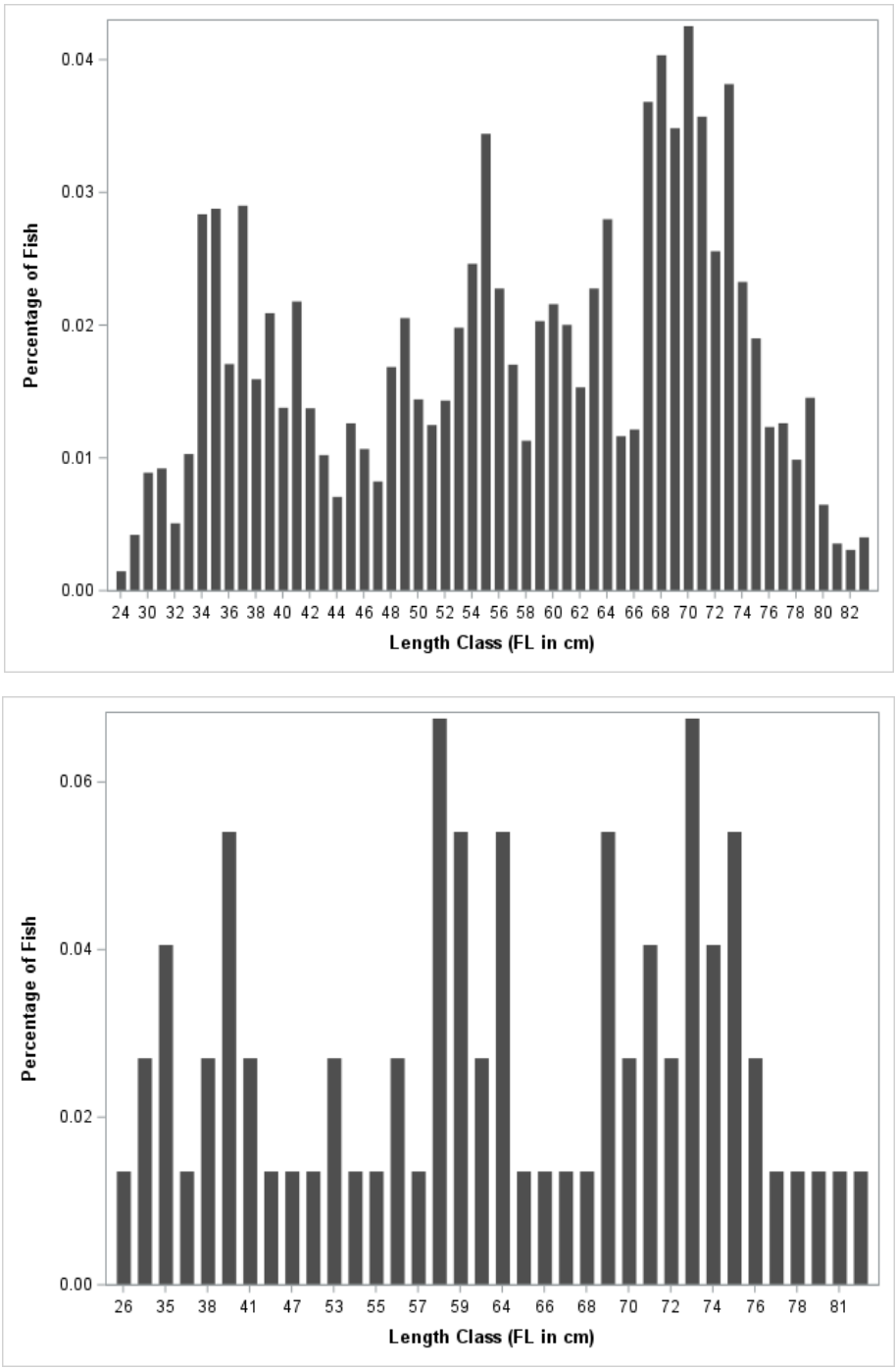

Figure 3.1. Size distribution of harvested Red Snapper sampled from private boat (top panel) and charter boat trips (bottom panel) during 2020. Samples from private boats are weighted proportional to total estimated landings for each inlet.

Appendix 1. Letter sent to federally permitted charter representatives the week prior to the South Atlantic Red Snapper Season opening.

FWC RED SNAPPER SURVEY

Florida Fish and Wildlife Conservation Commission

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Managing fish and wildlife resources for their long-term well-being and the benefit of people.

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MyFWC.com/Research

July 1, 2020

Dear Florida Charter Vessel Operator;

The 2020 federal red snapper recreational fishery in the South Atlantic will be open for four days, over two weekends, July 10, 11, 12 and July 17. The state of Florida is requesting your assistance so that we can collect more precise information on the numbers of charter trips and numbers of red snapper harvested during this short season. You are receiving this letter because our records show that you have a valid South Atlantic Headboat/Charter Snapper-Grouper permit. Enclosed is a log sheet printed on waterproof paper that may be used to keep track of your charter fishing activity during the 2020 federal red snapper recreational season. You may respond to this survey in one of two ways:

1. At the close of the federal red snapper season, return the completed log sheet using the self-addressed postage-paid envelope. If your charter business is not offering charter fishing trips in the Atlantic Ocean during the 2020 season, simply record this information at the top of the log sheet and mail it to us at your earliest convenience.

2. After July 17th, an FWC biologist will contact you by telephone to conduct a short interview and collect information about your charter fishing activity during the red snapper season. If you have already mailed your log sheet to FWC when you receive our call, please let the caller know and we will not contact you again.

We are collecting this additional information because the regular dockside intercept survey (when FWC biologists interview charter customers at the dock) was not designed to precisely estimate landings over very short fishing seasons. Therefore, your assistance during this special season is requested to ensure that we collect the best data possible to assess the federal red snapper season. Results from this survey will be shared directly with federal fishery managers for use in monitoring landings during the 2020 season and stock assessment updates for red snapper.

FWC will also be conducting dockside surveys with charter boat and private recreational anglers as they return from red snapper fishing trips. Biologists will ask for permission to weigh and measure fish and collect samples to determine the age of each fish. The recreational harvest season offers our only opportunity to collect this vital information for use in future stock assessments. To learn more about these efforts, please visit our website. A copy of the report produced last year is available at http://myfwc.com/research/saltwater/fishstats/recreational-fisheries/atlantic-results/. Please feel free to contact myself or Beverly Sauls at (727) 896-8626 or FishStats@MyFWC.com if you have any questions or concerns. Thank you for your cooperation.

Sincerely,

Dominique Lazarre

Dominique Lazarre
Associate Research Scientist

Appendix 2. Log sheet send to federally permitted charter representatives the week prior to the South Atlantic Red Snapper season opening.

Florida – Red Snapper Survey Log Vessel Name: Vessel Number:

Did you participate in the 2020 Federal South Atlantic Red Snapper Season (Trips where you caught or tried to catch Atlantic Red Snapper)? *YES* *NO*
If you circled yes above, please complete the log sheet below. ***Only report trips where Atlantic Red snapper were harvested, released at sea, or targeted.***

Date	Day of Week	Trip No.	Trip Type (Charter, Headboat, or Other)	No. of Anglers	No. in Party	Origin of Trip		Miles from Shore (range)	Miles from Shore (majority of trip)	Depth Fished (majority of trip)	Time Trip Started (24hr)	Time Trip Ended (24hr)	Time Spent Fishing (nearest half-hr)	No. of Atlantic Red Snapper Kept	No. of Atlantic Red Snapper Released
						State	County								
7/10/2020	FRI	1													
7/10/2020	FRI	2													
7/10/2020	FRI	3													
7/11/2020	SAT	1													
7/11/2020	SAT	2													
7/11/2020	SAT	3													
7/12/2020	SUN	1													
7/12/2020	SUN	2													
7/12/2020	SUN	3													
7/17/2020	FRI	1													
7/17/2020	FRI	2													
7/17/2020	FRI	3													

Please write any additional comments about the season or your trips below or on the back of this sheet.