

# Amendment 51 to the Snapper Grouper Fishery Management Plan of the South Atlantic Region

## Catch Level Adjustments and Allocations for Snowy Grouper

### Background

The South Atlantic stock of snowy grouper was first assessed through the Southeast Data, Assessment, and Review (SEDAR) in 2004. The results of this assessment (SEDAR 4) indicated that the stock was both overfished and undergoing overfishing. In response, the

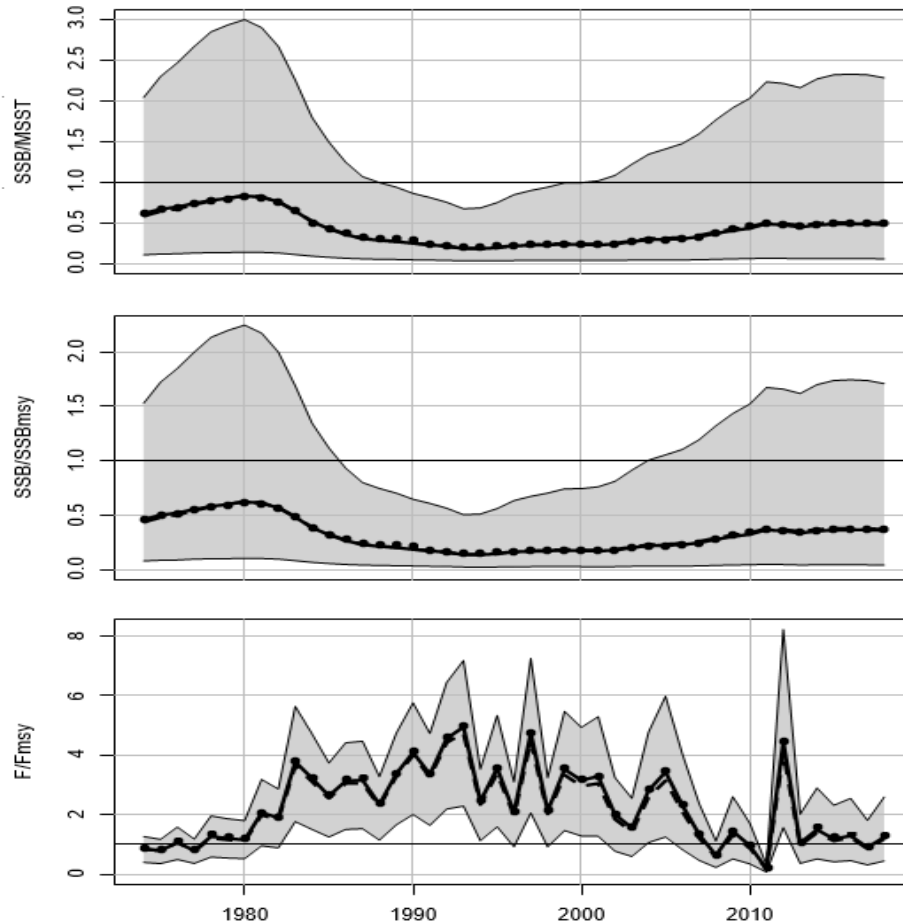
South Atlantic Fishery Management Council (Council) and the National Marine Fisheries Service (NMFS) developed Amendment 13C to the Snapper Grouper Fishery Management Plan (Snapper Grouper FMP) to end overfishing. This amendment reduced the quota as well as the trip and bag limit. In 2006 a 34-year rebuilding plan was created through Amendment 15A to the Snapper Grouper FMP, with a terminal year of the rebuilding plan in 2042.

In 2013, the stock was assessed through SEDAR 36. This assessment indicated that the South Atlantic stock of snowy grouper remained overfished and was no longer experiencing overfishing. Through Regulatory Amendment 20, the Council and NMFS revised the rebuilding strategy, modified the annual catch limits (ACL), commercial trip limit, and recreational season.

**History of Snowy Grouper Stock Status**

Assessment	Overfished	Overfishing
SEDAR 4 (2006)	X	X
SEDAR 36 (2014)	X	
SEDAR 36 Update (2020)	X	X

The update to SEDAR 36 was completed in 2020. This assessment used revised estimates for recreational catch from the Marine Recreational Information Program (MRIP) based on the Fishing Effort Survey (FES). The results of this assessment indicated that the stock is overfished and is experiencing overfishing (**Figure 1**). The Council’s Scientific and Statistical Committee (SSC) reviewed the SEDAR 36 Update at their January 2021 meeting and determined that the assessment is based on the best scientific information available (BSIA). This assessment updated commercial and recreational landings and discards, indices of abundance, length compositions, and maximum age.



**Figure 1.** Estimated time series of spawning stock biomass (SSB) and fishing mortality (F) relative to benchmarks. Solid line indicates estimates from base run of the Beaufort Assessment Model; gray error bands indicate 5<sup>th</sup> and 95<sup>th</sup> percentiles of the ensemble modeling. Top panel: SSB relative to the minimum stock size threshold (MSST); if less than 1, stock is overfished. Middle panel: SSB relative to SSB<sub>MSY</sub>. Bottom panel: F relative to F<sub>MSY</sub>; if > 1 stock is undergoing overfishing. *Source: SEDAR 36 Update (2020).*

The Council received the results of the assessment and the SSC’s recommendations for the Overfishing Limit (OFL) and Acceptable Biological Catch (ABC) at their March 2021 meeting and directed staff to begin work on a plan amendment to adjust catch levels based on the SSC recommendations and SEDAR 36 Update. Additionally, the Council’s Snapper Grouper

Advisory Panel (AP) discussed and provided recommendations on modifications to snowy grouper management measures at their April 2021 meeting. These recommendations can be found in the [Snapper Grouper AP’s meeting summary report](#).

NMFS notified the Council on June 10, 2021, that management action is necessary for snowy grouper as the stock is undergoing overfishing and remains overfished. Once the Council is notified that a stock is undergoing overfishing and overfished, the Magnuson-Stevens Fishery Conservation and Management Act requires the Council and NMFS to implement a plan amendment to end overfishing immediately. NMFS recommended that the Council end overfishing of snowy grouper and continue stock rebuilding based on the results of SEDAR 36 Update.

## Proposed management changes in this amendment

- Adjust catch levels (annual catch limit) and revise annual optimum yield
- Revise sector allocations
- Consider other changes to management

## Objectives for this meeting

- Provide guidance on options for development
- Approve the amendment for scoping

## Tentative amendment timing

March 2021	Reviewed SEDAR 36 Update results and direct staff to begin a plan amendment
<b>September 2021</b>	<b>Review options/scoping paper, provide guidance to staff, and approve the amendment for scoping</b>
October/November 2021	Conduct scoping & obtain input from SG AP
December 2021	Review scoping & AP comments, review preliminary analyses, and provide guidance to staff
March 2022	Review modifications to the amendment
June 2022	Review modifications to the amendment, select preferred alternatives, and approve for public hearings
July/August 2022	Conduct public hearings
September 2022	Review public hearing comments and approve all actions

December 2022	Review final draft amendment and consider approval for formal review
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## DRAFT Purpose and Need Statements

This Purpose and Need statement is a draft version and may change, pending Council guidance at the September 2021 meeting.

The *purpose* of this fishery management plan amendment is to revise the acceptable biological catch, annual catch limits and sector allocations for South Atlantic snowy grouper based on the results of the most recent stock assessment.

The *need* for this fishery management plan amendment is to end overfishing of South Atlantic snowy grouper, continue to rebuild the stock, and achieve optimum yield while minimizing, to the extent practicable, adverse social and economic effects.

## Acceptable Biological Catch and Overfishing Limit

The SSC reviewed the snowy grouper stock assessment (SEDAR 36 Update 2020) at their January 2021 meeting. The SSC found that the assessment addressed the terms of reference appropriately, was conducted using the BSIA, was adequate for determining stock status and supporting fishing level recommendations and addressed uncertainty consistent with expectations and available information. The SSC applied the ABC Control Rule and recommended the following ABC and OFL for snowy grouper. Recommendations are based on landings and expressed in total removals (**Table 1**). **ABC/OFL recommendations are converted to pounds gutted weight using a 1.18 NMFS conversion factor. According to SEDAR 36 Update, 95.4% of total removals of snowy grouper are landings and 4.6% are dead discards.** Landings recommendations have been calculated to account for dead discards.

**Table 1.** South Atlantic Snowy grouper OFL and ABC recommendations in pounds gutted weight (lbs gw) and numbers of fish.

OFL RECOMMENDATIONS					
Year	Removals (lbs ww)	Removals (lbs gw)	Removals (numbers of fish)	Landings (lbs gw)	Landings (numbers of fish)
2023	194,000	164,407	21,000	156,844	20,034
2024	193,000	163,559	20,000	156,035	19,080
2025	192,000	162,712	20,000	155,227	19,080
2026	188,000	159,322	20,000	151,993	19,080
ABC RECOMMENDATIONS					

Year	Removals (lbs ww)	Removals (lbs gw)	Removals (numbers of fish)	Landings (lbs gw)	Landings (numbers of fish)
2023	148,000	125,424	16,000	119,954	15,624
2024	150,000	127,119	16,000	121,272	15,624
2025	152,000	128,814	16,000	122,889	15,624
2026	152,000	128,814	16,000	122,889	15,624

The current ABC and the total ACL for snowy grouper is 218,848 pounds (lbs) whole weight (ww) (185,464 lbs gw) (Regulatory Amendment 20, SAFMC 2015). Commercial and recreational sector ACLs are currently monitored using different metrics. The commercial sector ACL is monitored using weight and the recreational sector ACL is monitored using numbers of fish. Few snowy grouper are observed in the recreational fishery and the low sample size can cause annual variation in the estimated average weight for snowy grouper. Council staff recommend continuing to track the recreational sector ACL in numbers of fish. The recreational ACL was converted to numbers of fish using projected annual average weights. Though the ABC in numbers of fish is consistent throughout the projection timeframe, average weight as well as ABCs and ACLs measured by weight are expected to increase as the stock rebuilds.

## Options for Proposed Actions

### 1. Revise the snowy grouper total annual catch limit and annual optimum yield

- New ACLs are needed since the SSC recommended new OFL and ABC values.
- The Council has specified ABC=ACL=OY for most snapper grouper species. National Standard 1 guidelines state that although a Council can establish an annual OY, it must establish a long-term OY.
- Current ACL specifications:
  - The commercial ACL is currently specified in pounds (lbs) gutted weight (gw).
  - The commercial trip limit is specified in lbs gw. The conversion between lbs whole weight (ww) and lbs gw is 1.18 (NMFS Conversion).
  - The recreational ACL is currently specified in number of fish. The recreational bag limit is specified in numbers of fish and reported in numbers of fish.
  - The projections from the SEDAR assessment include both numbers and pounds of fish.
- Commercial landings of snowy grouper in the South Atlantic averaged 106.6% percent of the commercial ACL from 2015 through 2020. Commercial closures have occurred each year from 2015-2020 (**Table 2**). The commercial split season, which sought to extend the commercial season by allocating 70% of the commercial ACL to January-June and 30%

of the commercial ACL to July-December, was effective February 2020 through Regulatory Amendment 27.

**Table 2.** The percentage of the commercial ACL landed each year from 2015-2020. Note: The commercial split season was first effective in 2020.

Year	Season(s) and Closures	ACL (lbs gw)	% ACL
2020	Jan 1 - Jun 30, Jul 1 - Dec 31 (closure 12/12/20)	153,935	100.5
2019	Jan 1 - Dec 31 (closure: 8/3/19)	144,315	105.2
2018	Jan 1 - Dec 31 (closure: 7/24/18)	144,315	101.8
2017	Jan 1 - Dec 31 (closure: 6/22/17)	135,380	100.3
2016	Jan 1 - Dec 31 (closure: 6/14/16)	125,760	118.8
2015	Jan 1 - Dec 31 (closure: 7/6/2015, re-opened 8/20/2015, 9/22/15)	115,451	112.7

Source: [http://sero.nmfs.noaa.gov/sustainable\\_fisheries/acl\\_monitoring/index.html](http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/index.html)

- Recreational landings of snowy grouper in the South Atlantic averaged 63.8% of the recreational ACL from 2015 through 2020 based on CHTS landings (**Table 3**). The snowy grouper recreational bag limit was reduced to 1 fish per vessel per day in October 2006 (Amendment 13C) to constrain harvest below the ACL.

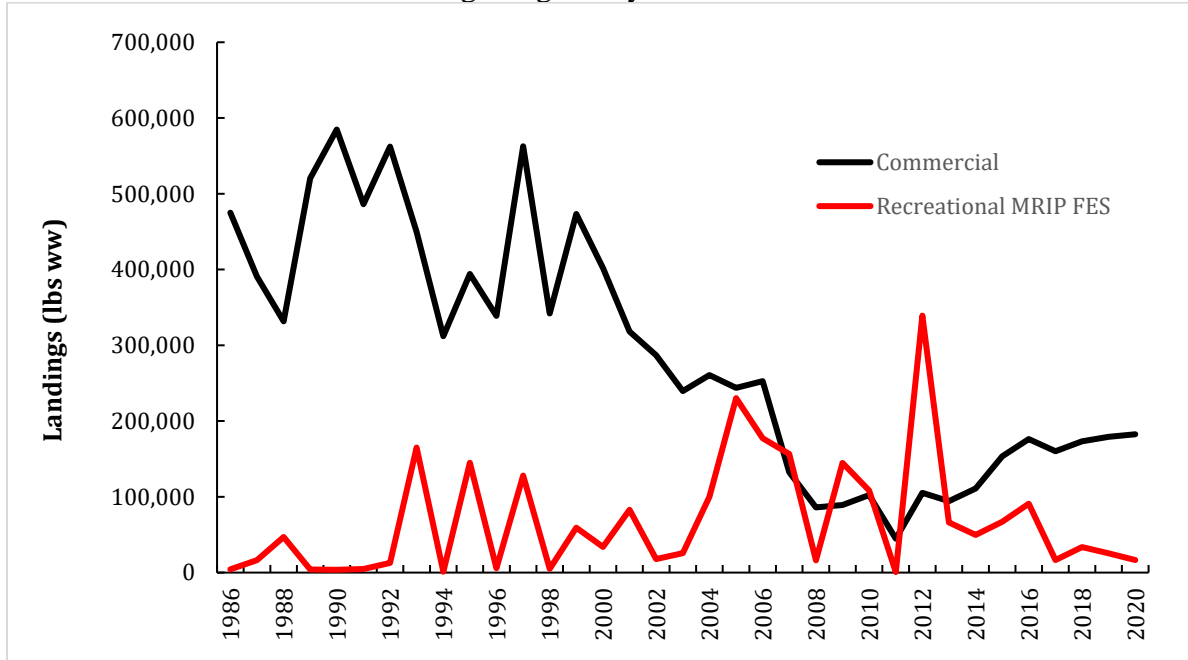
**Table 3.** The percentage of the recreational ACL landed each year from 2015-2020. Note: Since the ACLs through 2020 were established using CHTS data, CHTS landings were used to determine the % ACL used each year from 2015-2020.

Year	Season and Closures	ACL (numbers of fish; MRIP CHTS)	% ACL
2020	May 1 – Aug 31	5,315	24.6
2019	May 1 – Aug 31	5,315	36.6
2018	May 1 – Aug 31	4,983	55.5
2017	May 1 – Aug 31	4,819	40.6
2016	May 1 – Aug 31	4,483	140.8
2015	May 1 – Aug 31 (closure: 9/1/15)	4,152	84.7

Source: [http://sero.nmfs.noaa.gov/sustainable\\_fisheries/acl\\_monitoring/index.html](http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/index.html)

- **Figure 2** below shows snowy grouper commercial and recreational landings (lbs ww) by year from 1986 through 2020. Commercial landings are in black. Recreational landings estimates based on the MRIP FES survey are shown in red. In 2011 the 240 ft deepwater

closure was put into place through Amendment 17B for six species including snowy grouper but was then removed in 2011 through Regulatory Amendment 10.



**Figure 2.** Snowy grouper commercial and recreational landings (lbs ww) by year from 1986 through 2020. Commercial landings are in black. Recreational MRIP FES estimates are in red. Sources: SEFSC Commercial ACL Datasets (Commercial ACL File October 9, 2020 and the ACL file provided April 5, 2021 for landings from 2014-2020); SEFSC Recreational MRIP FES ACL file (May 11, 2021).

- Options for developing a range of alternatives:

**Option 1 (No Change).** The annual catch limit and annual optimum yield for snowy grouper are equal to the current acceptable biological catch (218,848 pounds whole weight, 185,464 pounds gutted weight).

**Option 2.** The total ACL and annual OY for snowy grouper are equal to the updated ABC. The 2026 ACL would remain in place until modified.

Note: Given the timing of amendment development, new catch levels would likely be effective during 2023 fishing year. Number of fish remain the same throughout the time period because it is assumed that fish moving through age classes gain weight, therefore increasing the available poundage. However, this does not increase the number of fish.

Year	ABC (lbs gw)	Total ACL=OY (lbs gw)	Total ACL=OY (numbers of fish)
2023*	119,954	119,954	15,624
2024	121,272	121,272	15,624
2025	122,889	122,889	15,624

2026+	122,889	122,889	15,624
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**Option 3.** The total ACL and annual OY for snowy grouper are equal to 90% of the updated ABC. The 2026 ACL would remain in place until modified.

Note: Given the timing of amendment development, new catch levels would likely be effective during 2023 fishing year. Number of fish remain the same throughout the time period because it is assumed that fish moving through age classes gain weight, therefore increasing the available poundage. However, this does not increase the number of fish.

Year	ABC (lbs gw)	Total ACL=OY (lbs gw)	Total ACL=OY (numbers of fish)
2023*	119,954	107,959	14,062
2024	121,272	109,145	14,062
2025	122,889	110,600	14,062
2026+	122,889	110,600	14,062

**Option 4.** The total ACL and annual OY for snowy grouper are equal to 80% of the updated ABC. The 2026 ACL would remain in place until modified.

Note: Given the timing of amendment development, new catch levels would likely be effective during 2023 fishing year. Number of fish remain the same throughout the time period because it is assumed that fish moving through age classes gain weight, therefore increasing the available poundage. However, this does not increase the number of fish.

Year	ABC (lbs gw)	Total ACL=OY (lbs gw)	Total ACL=OY (numbers of fish)
2023*	119,954	95,963	12,499
2024	121,272	97,018	12,499
2025	122,889	98,311	12,499
2026+	122,889	98,311	12,499

- Based on **Option 2** (ABC=ACL=OY), the following decreases from the current ACL would be observed (**Table 4**):

**Table 4.** The difference and percent difference from the current ACL based on **Action 1 Option 2**. Current total ACL is 185,464 lbs gw. Current commercial ACL is 153,935 lbs gw. Recreational landings are not shown because new ACL will be based on FES landings, whereas the previous ACL is based off of CHTS landings.

	Total ACL (185,464 lbs gw)		Commercial ACL (153,935 lbs gw)
Year	Difference from current ACL (lbs gw)	Percent Difference from current ACL	Difference from current Commercial ACL (lbs gw)
2023	-65,510	42.9%	-54,373



2024	-64,192	41.9%	-53,279
2025	-62,575	40.6%	-51,937
2026+	-62,575	40.6%	-51,937

### Committee Action:

- Provide guidance on range of options to develop in **Action 1**. How does the Council wish to specify the total ACLs (pounds or numbers of fish)?

## 2. Revise the snowy grouper sector allocations and sector annual catch limits

- Allocations need to be reviewed because recreational landings were updated in the new assessment. Recreational landings are now estimated using the MRIP FES method rather than the previous Coastal Household Telephone Survey (CHTS).
- Sector allocations for snowy grouper were implemented through Amendment 15B to the Snapper Grouper FMP (SAFMC 2006) (commercial 95%, recreational 5%) using average commercial and recreational landings for the period 1986-2005.
- SEDAR 36 (2013) updated the landings for these years, including adjusting to account for the change from the Marine Recreational Fisheries Statistics Survey (MRFSS) to the MRIP CHTS. The resulting change in the methodology used to estimate recreational landings caused a shift in allocation to 83% commercial and 17% recreational. These revised allocations were implemented in (2015) through Regulatory Amendment 20.
- The current allocation formula was adopted through the Comprehensive ACL Amendment (SAFMC 2011) for unassessed Snapper Grouper species. The same formula has also been used to allocate the total ACL for some assessed species (i.e. Golden Tilefish). The allocation formula was not used to determine snowy grouper allocations.
- If Option 1 (No Action) is selected for this action, the sector ACLs would be adjusted based on the revised total ACL and the existing sector allocation percentages (83% commercial and 17% recreational).
- For Options 2-4, the total ACL listed in the tables is representative of **Option 2 (ACL=ABC)** for **Action 1**. The revised total annual catch limit includes recreational landings based on the MRIP FES method and reflect stock assessment results of SEDAR 36 Update.
- The commercial snowy grouper ACL is currently allocated between two seasons with 70% of the commercial ACL allocated to season 1 (Jan- Jun) and 30% to season two (Jul-Dec).
- Options for developing a range of alternatives:

**Option 1 (No Change).** Retain current sector allocation percentages determine based on the average landings from 1986 to 2005 and apply to the revised total annual catch limit. The snowy grouper total annual catch limit is allocated 83% to the commercial sector and 17% to the recreational sector.

Year	Total ACL (lbs gw)	Total ACL (Numbers)	Recreational ACL (lbs gw)	Commercial ACL (lbs gw)			Recreational ACL (Numbers of Fish)
				Total	Season 1	Season 2	
2023	119,954	15,624	20,392	99,562	69,693	29,869	2,656
2024	121,272	15,624	20,616	100,656	70,459	30,197	2,656
2025	122,889	15,624	20,891	101,998	71,399	30,599	2,656
2026	122,889	15,624	20,891	101,998	71,399	30,599	2,656

**Option 2.** Revise sector allocations based on the average landings from 1986 to 2005 from the most recent landings that are inclusive of FES data. This would result in 87.6% of the total ACL allocated to the commercial sector and 12.5% of the total ACL allocated to the recreational sector.

Year	Total ACL (lbs gw)	Total ACL (Numbers)	Recreational ACL (lbs gw)	Commercial ACL (lbs gw)			Recreational ACL (Numbers of Fish)
				Total	Season 1	Season 2	
2023	119,954	15,624	14,994	109,038	76,327	32,711	1,953
2024	121,272	15,624	15,159	110,236	77,165	33,071	1,953
2025	122,889	15,624	15,361	111,706	78,194	33,512	1,953
2026	122,889	15,624	15,361	111,706	78,194	33,512	1,953

**Option 3.** Apply the allocation formula: sector annual catch limit = ((mean landings 2006-2008)\*0.5) + ((mean landings 1986-2008)\*0.5). This would result in 73.4% of the total ACL allocated to the commercial sector and 26.6% to the recreational sector.

Year	Total ACL (lbs gw)	Total ACL (Numbers)	Recreational ACL (lbs gw)	Commercial ACL (lbs gw)			Recreational ACL (Numbers of Fish)
				Total	Season 1	Season 2	
2023	119,954	15,624	31,908	88,046	61,632	26,414	4,156
2024	121,272	15,624	32,258	89,014	62,310	26,704	4,156
2025	122,889	15,624	32,688	90,201	63,141	27,060	4,156
2026	122,889	15,624	32,688	90,201	63,141	27,060	4,156

**Other Options?**

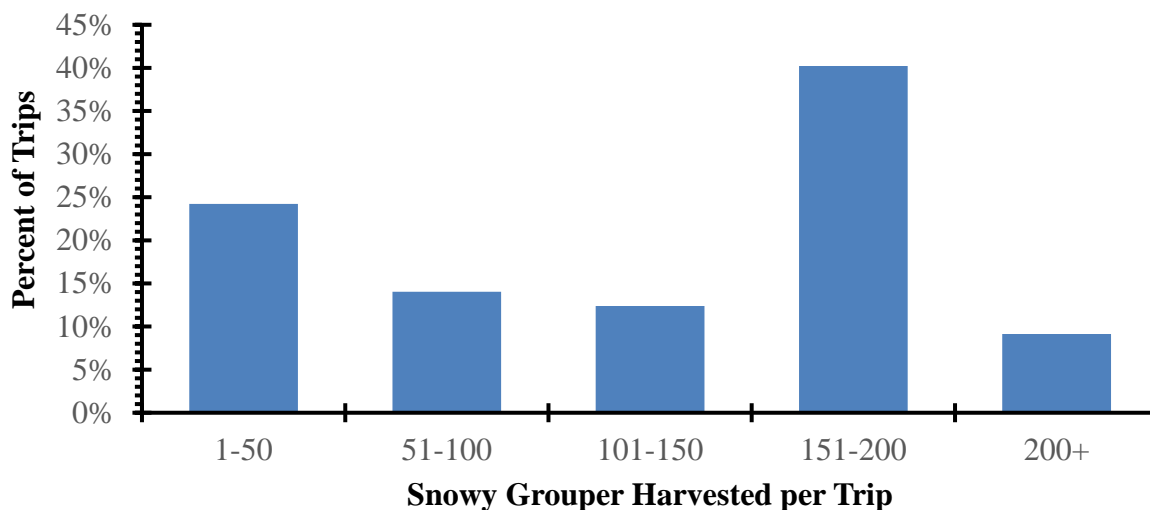
**Committee Action:**

- Provide guidance on range of options to develop in **Action 2**.

## Other Possible Actions:

### 3. Modify commercial management measures?

- The current commercial trip limit for snowy grouper is 200 lbs gw. Regulatory Amendment 20 implemented the current trip limit in 2015. The previous trip limit was 100 lbs gw.
- The current commercial season for snowy grouper is split into two seasons. Season one is from January 1<sup>st</sup> through June 30<sup>th</sup>. The second season is from July 1<sup>st</sup> to December 31<sup>st</sup>. The 2021 commercial ACL is pounds gutted weight is 153,935 lbs (gw). Currently, 70% (107,754 lbs gw) of the total commercial ACL is allocated to season one and 30% (46,181 lbs gw) for season two. Regulatory Amendment 27 implemented the split seasons in February 2020.
- Greater than 40% of the trips harvesting snowy grouper are estimated to have landed between 151 through 200 lbs gw (**Figure 3**; also see **Appendix I**). Trips estimated to have harvested greater than 200 lbs gw were normalized to 200 lbs gw when estimating potential trip limit reductions. Estimated reductions from projected landings for potential trip limits are shown in **Table 5**.

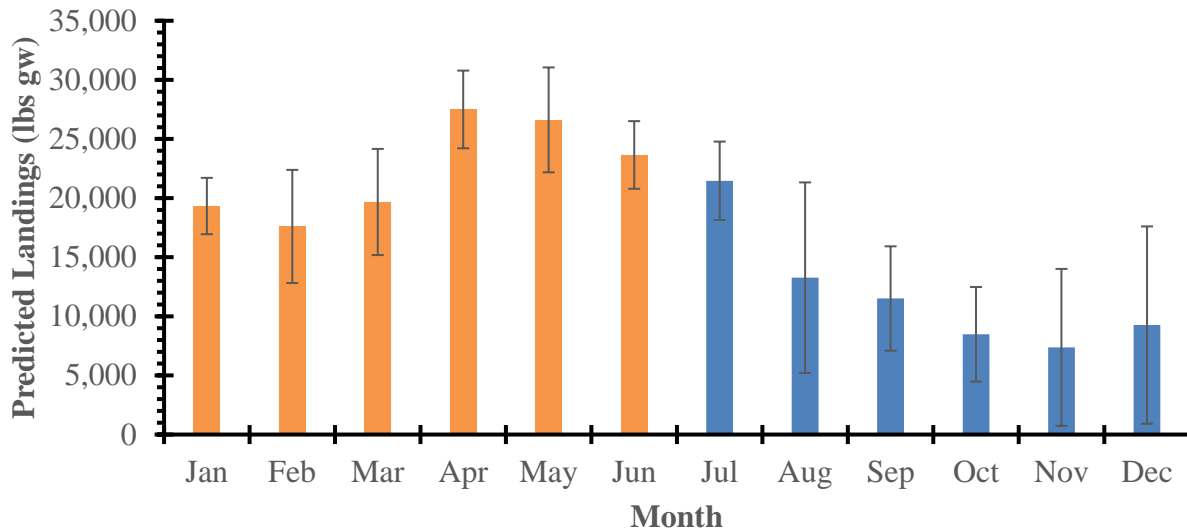


**Figure 3.** The percent of commercial trips (n=3,249) harvesting snowy grouper by bin from 2016 through 2019. Source: SEFSC commercial logbook [May 6, 2021].

**Table 5.** The predicted percent change in snowy grouper commercial landings per trip from the current 200-lb gw trip limit for potential trip limits of 150 and 100 lbs gw.

Current Trip Limit (lbs gw)	Potential Trip Limit (lbs gw)	Predicted Change in Landings
200-lb	150-lb	-16%
200-lb	100-lb	-38%

- Commercial landings for South Atlantic snowy grouper were obtained from the SEFSC commercial ACL file (4/5/21). Future landings were predicted by taking an average of the most recent three years of data for each month, as the most recent data are believed to be the best approximation of future harvest (**Figure 4**).



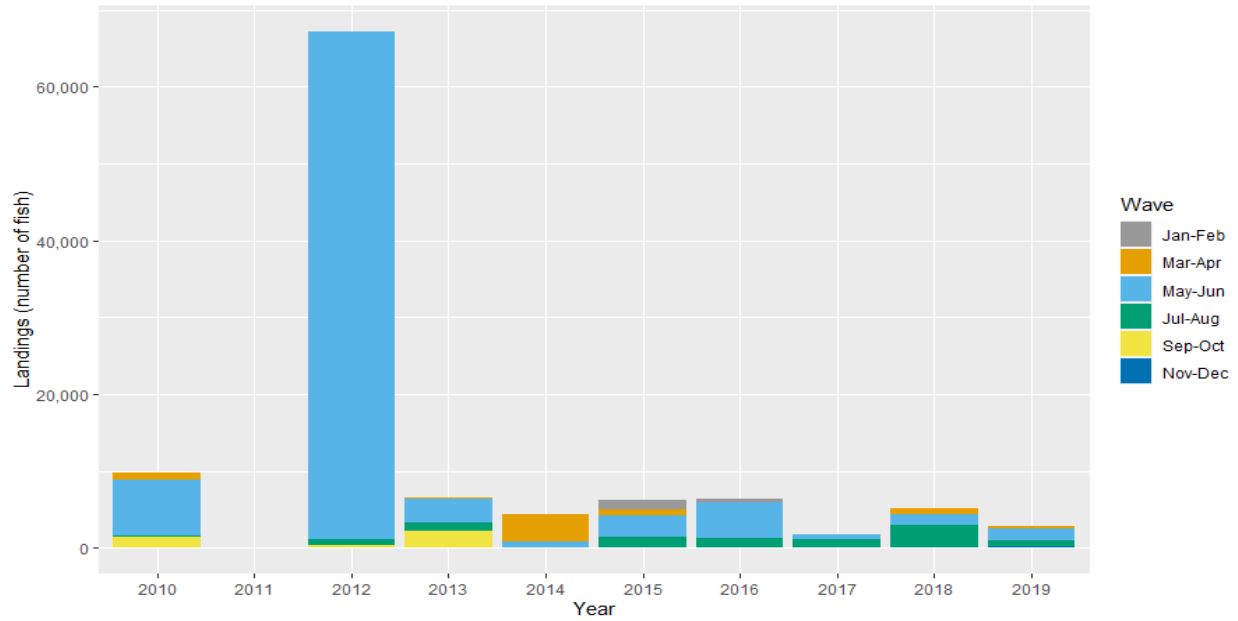
**Figure 4.** The predicted monthly snowy grouper commercial landings (lbs gw) based on current trip limits with 95% confidence interval. Source: SEFSC commercial ACL file [April 5, 2021].

### Committee Action:

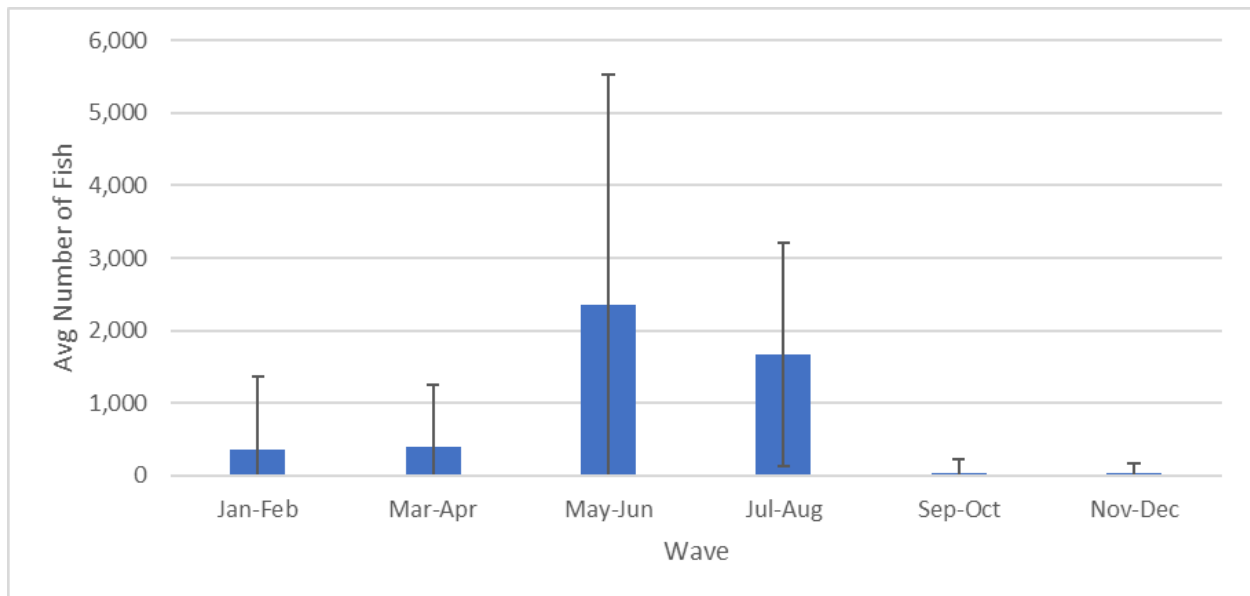
- Provide guidance on whether modifying commercial management measures should be included for scoping.

### 4. Modify recreational management measures?

- The current recreational season for snowy grouper is May 1<sup>st</sup> through August 31<sup>st</sup> and recreational harvest is limited to one snowy grouper per vessel.
- The annual recreational landings of snowy grouper have been less than 10,000 fish every year from 2010 to 2019 except 2012 when landings were over 60,000 fish. Charter and private recreational trips (estimated through MRIP) averaged 89% of the total recreational landings over the ten-year timeframe. Recreational landings of snowy grouper from 2010 to 2019 tended to be highest in May - June (wave 3) or July - August (wave 4) (**Figure 5**, 2011 included a deepwater closure for part of the year). From 2015 to 2019, the average landings were highest during the snowy grouper recreational fishing season May through August (**Figure 6, Table 6**). Landings were reported in January through April and most of these landings (55%) occurred in 2015, prior to the season being enacted.



**Figure 5.** Recreational landings of snowy grouper (number of fish) by year and wave from 2010 to 2019 for the South Atlantic region. Landings include trips reported from Key West, FL up to the Virginia and North Carolina border.



**Figure 6.** Average number of snowy grouper landed in recreational sector by wave from the South Atlantic from 2015 to 2019. The landings included trips reported from Monroe County, FL. Blue bars represent the average landings and lines represent the 95% confidence interval.

**Table 6.** Average number of snowy grouper landed by the recreational sector by wave from the South Atlantic from 2015 to 2019. The landings included trips reported from Monroe County, FL. The confidence interval was developed based on the standard deviation of the five years.

Wave	Average	Confidence Interval	Average Number Per Month
Jan-Feb	351	0 - 1,372	175.5
Mar-Apr	395	0 - 1,256	197.5
May-Jun	2,354	0 - 5,520	1,177.0
Jul-Aug	1,674	138 - 3,210	837.0
Sep-Oct	45	0 - 230	22.5
Nov-Dec	30	0 - 163	15.0

**Committee Action:**

- Provide guidance on whether to consider changes to the recreational management measures.

**5. Modify accountability measures?**

- If commercial landings for snowy grouper, as estimated by the SRD, reach or are projected to reach the commercial ACL (commercial quota) specified in §622.190(a)(1), the AA will file a notification with the Office of the Federal Register to close the commercial sector for the remainder of the fishing year.
- If recreational landings for snowy grouper, as estimated by the SRD, reach or are projected to reach the recreational ACL, the AA will file a notification with the Office of the Federal Register to close the recreational sector for the remainder of the fishing year, regardless if the stock is overfished, unless NMFS determines that no closure is necessary based on the best scientific information available. On and after the effective date of such notification, the bag and possession limits for snowy grouper in or from the South Atlantic EEZ are zero.

**Committee Action:**

- Provide guidance on whether to consider changes to the accountability measures.

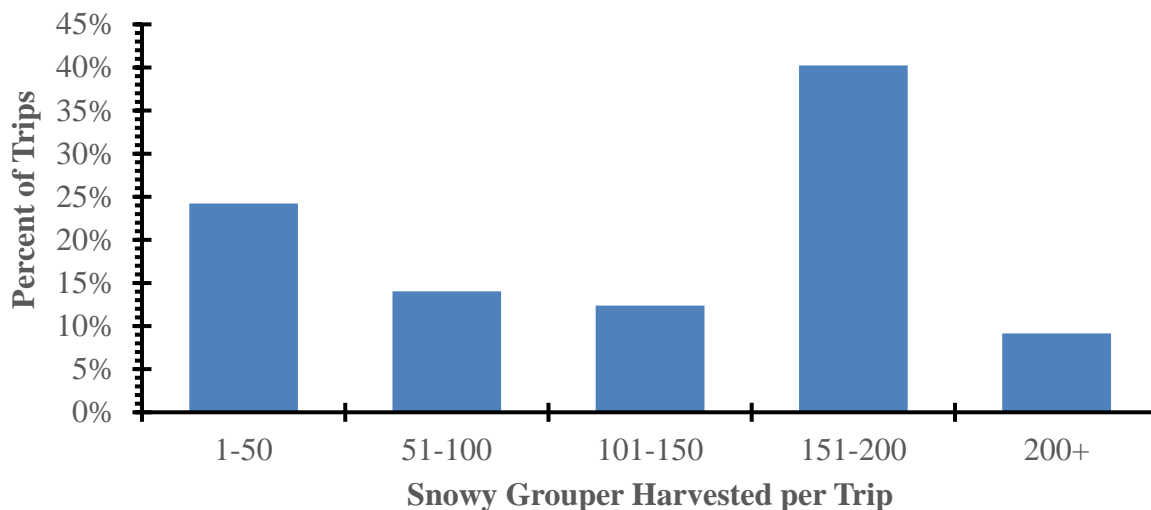
# Appendix

## Appendix I. Commercial ACL Analysis

Preliminary analyses are for the 2023 potential commercial annual catch limit (ACL) of 99,562 pounds (lbs) gutted weight (gw) with the current allocation (83% commercial and 17% recreational).

### *Commercial Trip Limits*

The Southeast Fisheries Science Center (SEFSC) commercial logbook data (5/6/21) was used to examine trip limits in the South Atlantic snowy grouper commercial fishery. Currently, the fishery has a 200-lb gw trip limit that was implemented in August 2015. From 2016 through 2019, the commercial logbook had 3,249 trips recorded that harvested snowy grouper in the South Atlantic. Greater than 40% of the trips harvesting snowy grouper are estimated to have landed between 151 through 200 lbs gw (**Figure A-1**). Trips estimated to have harvested greater than 200 lbs gw were normalized to 200 lbs gw when estimating potential trip limit reductions. Estimated reductions from projected landings for potential trip limits are shown in **Table A-1**.



**Figure A-1.** The percent of commercial trips (n=3,249) harvesting snowy grouper by bin from 2016 through 2019. Source: SEFSC commercial logbook [May 6, 2021].

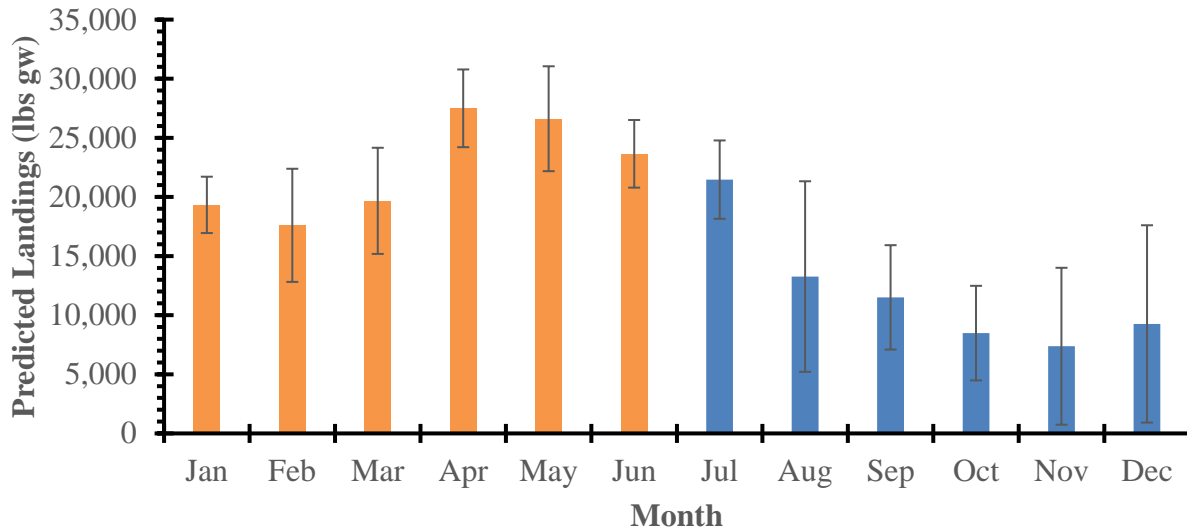
**Table A-1.** The predicted percent change in landings per trip from the current 200-lb gw trip limit.

Current Trip Limit (lbs gw)	Potential Trip Limit (lbs gw)	Predicted Change in Landings
200-lb	150-lb	-16%
200-lb	100-lb	-38%



### Commercial Season Length

Landings for South Atlantic snowy grouper were obtained from the SEFSC commercial ACL file (4/5/21). Future landings were predicted by taking an average of the most recent three years of data for each month, as the most recent data are believed to be the best approximation of future harvest (**Figure A-2**). Due to fishery closures in recent years, it was necessary to go back to 2010 for some monthly landings later in the calendar year. All monthly landings prior to August 2015 (when the trip limit was increased from 100 to 200-lb gw) were adjusted using to account for the management change. For months with a closure that had the fishery open for the majority of the days, the landings were expanded using the ratio of total days in the month to those when the fishery was open. Season lengths were projected using daily catch rates with upper and lower 95% confidence intervals with the different trip limit options (**Table A-2**).



**Figure A-2.** The predicted monthly snowy grouper landings (lbs gw) based on current trip limits with 95% confidence interval. Source: SEFSC commercial ACL file [April 5, 2021].

**Table A-2.** The projected 2023 closure dates with an ACL of 99,562 lbs gw for snowy grouper by season with different trip limit options and 95% confidence interval (CI). Note that 70% of the ACL is allocated to the January through June season and 30% to the July through December season.

Season	ACL (lbs gw)	Trip Limit (gw)	Closure Date	Season Length (95% CI)
January 1 – June 30	69,693	200-lb	April 15	Apr 2 – May 1
January 1 – June 30	69,693	150-lb	April 29	Apr 15 – May 19
January 1 – June 30	69,693	100-lb	June 3	May 14 – No Closure
July 1 – December 31	29,869	200-lb	August 20	Aug 8 – Sep 28
July 1 – December 31	29,869	150-lb	September 2	Aug 16 – Nov 21
July 1 – December 31	29,869	100-lb	October 8	Sep 5 – No Closure

## Appendix II. Recreational ACL Analysis

Landings data match landings data included in SEDAR 36 Update working paper 2020–S36Update–WP01 and were similar to the FES monitoring file (MRIP\_FES\_rec81\_21wv1\_11May21w2014\_2020LACreel).

### *Data*

Marine Recreational Information Program (MRIP) samples included trips that landed from North Carolina through the Florida Keys as reported in SEDAR 36 Update. The raw intercept data files were downloaded from the MRIP webpage and included trips for sub-region 6 (South Atlantic) plus Monroe County (State =Florida and County = Monroe). Data available included trips back to 1981. Headboat from the Southeast Region Headboat Survey (SRHS) are available to 1974 and were provided by the survey staff. MRIP landings data match landings data included in SEDAR 36 Update working paper 2020–S36Update–WP01 (Matter and Nuttall 2020) and total recreational landings were similar (within 20 fish each year) to the FES monitoring file (MRIP\_FES\_rec81\_21wv1\_11May21w2014\_2020LACreel).

The IPT suggested the recreational seasonal analysis should include data from 2015 to 2019. This time period matches a regulation change in the fishery when the ACL increased from 521 fish and season was shortened to May through August. Data going back to 2010 were reviewed to see if dramatic shifts occurred in the seasonality of the catch due to the recreational season established in 2015.

The analysis included trips for Monroe County, FL where regulations differ between South Atlantic and Gulf of Mexico. Some of these trips may have been conducted in the Gulf of Mexico waters, where snowy grouper is included in a 4 grouper aggregate per person. The bag limit for the South Atlantic is one per vessel. It appears the trips were included in the assessment based on comparison of the data set used for this analysis and Table 1 from the SEDAR 36 Update Assessment working paper on recreational data (Matter and Nuttall 2020). Therefore, these trips were included in the seasonal analysis even though changes to SAFMC regulations would not change the landings of Snowy Grouper on the trips.

### *Review of Recreational Data Available for Snowy Grouper*

Data on recreational trips were limited for Snowy Grouper. On average, 16 MRIP (private and charter boat combined) trips per year (min = 11 and max = 21) were sampled with Snowy Grouper landings and 18 headboat trips (min=8 and max = 33) reported landings of Snowy Grouper from 2015 to 2019. Due to the low sample size and high variability (relative) in landings, any seasonal analysis will have a high degree of uncertainty.

### *Analysis*

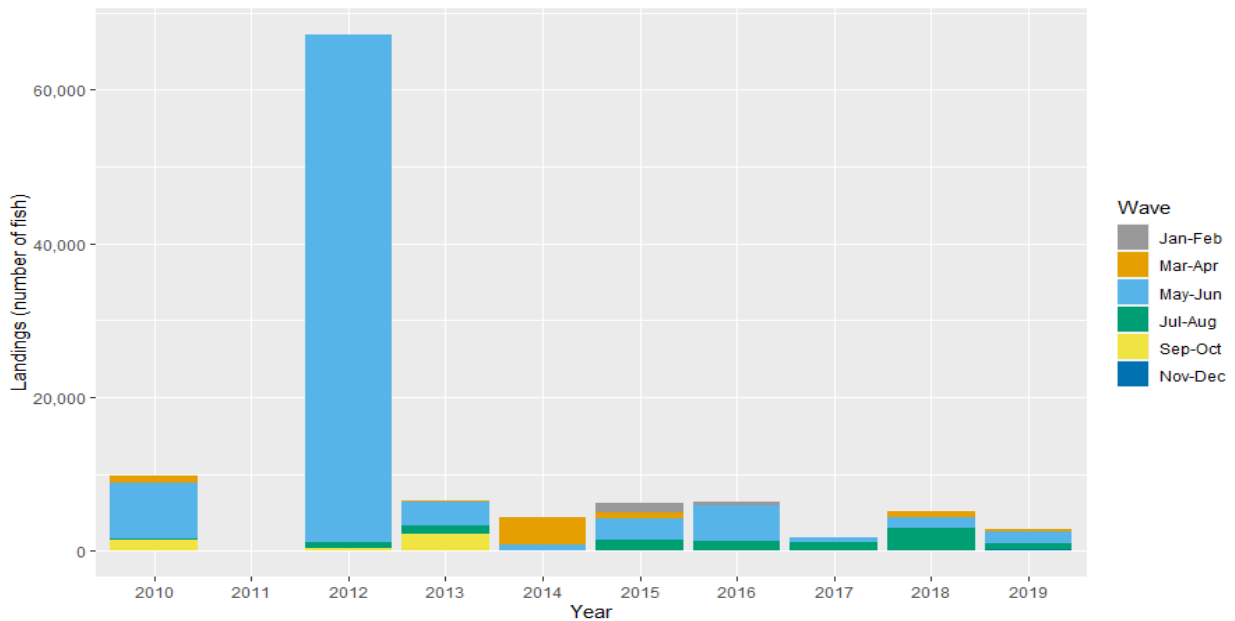
Recreational data from private recreational vessel, charter boats, and headboats were summed up by wave and year from 2015 to 2019. Mean landings were calculated by wave. Confidence intervals were calculated as mean +/- 1.96 \*standard deviation. A minimum value of 0 was used for confidence interval estimates that were less than zero.

## Results

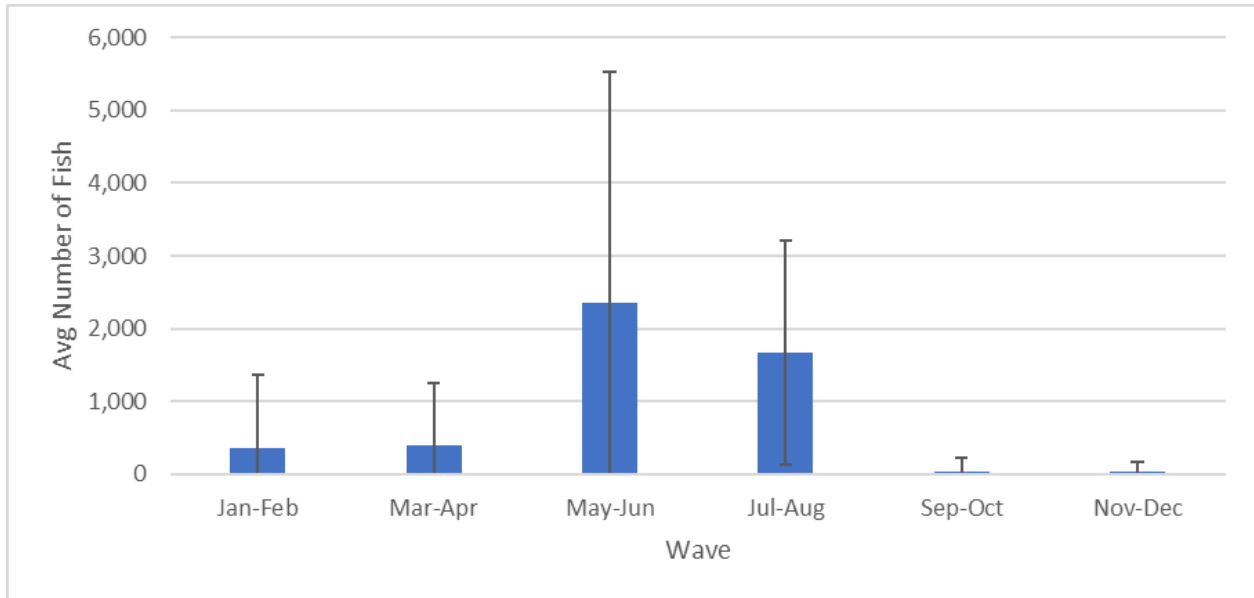
The annual recreational landings of Snowy Grouper have been less than 10,000 fish every year from 2010 to 2019 except 2012 when landings were over 60,000 fish. Charter and private recreational trips (estimated through MRIP) averaged 89% of the total recreational landings over the ten-year timeframe. Snowy Grouper were only observed through MRIP from trips that landed in North Carolina and Florida and most observations by SRHS occurred in North Carolina and Florida from 2010 to 2019. Snowy Grouper have not been observed through MRIP from trips the landed in Georgia since 1993 and South Carolina since 1982.

Recreational landings of Snowy Grouper from 2010 to 2019 tended to be highest in May - June wave or July - August wave (**Figure A-3**, 2011 included a deepwater closure for part of the year). There were rarely landings from November through February. Prior to the establishment of the recreational season for Snowy Grouper (2015), landings were most common in May through August but were reported in the March – April wave and September – October wave. From 2015 to 2019, the average landings were highest during the Snowy Grouper recreational fishing season May through August (**Figure A-4, Table A-3**). Landings were reported in January through April and most of these landings (55%) occurred in 2015, prior to the season being enacted.

There are extremely large confidence intervals based on the standard deviations. This indicates there will be significant uncertainty in estimating any impact from changing the recreational season. The confidence interval for all waves except wave 4 (July – August) are set to a minimum of zero to avoid negative numbers (**Table A-3**).



**Figure A-3.** Recreational landings of Snowy Grouper (number of fish) by year and wave from 2010 to 2019 for the South Atlantic region. Landings include trips reported from Key West, FL up to the Virginia and North Carolina border.



**Figure A-4.** Average number of Snowy Grouper landed in recreational sector by wave from the South Atlantic from 2015 to 2019. The landings included trips reported from Monroe County, FL. Blue bars represent the average landings and lines represent the 95% confidence interval.

**Table A-3.** Average number of Snowy Grouper landed by the recreational sector by wave from the South Atlantic from 2015 to 2019. The landings included trips reported from Monroe County, FL. The confidence interval was developed based on the standard deviation of the five years.

Wave	Average	Confidence Interval	Avg Number Per Month
Jan-Feb	351	0 - 1,372	175.5
Mar-Apr	395	0 - 1,256	197.5
May-Jun	2,354	0 - 5,520	1,177.0
Jul-Aug	1,674	138 - 3,210	837.0
Sep-Oct	45	0 - 230	22.5
Nov-Dec	30	0 - 163	15.0

**Literature Cited**

Matter, Vivian M. and Matthew A. Nuttall. 2020. Recreational Survey Data for Snowy Grouper in the South Atlantic. 2020-SEDAR36U-WP01. SEDAR, North Charleston, SC. 21 pp.