

# 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) process 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.

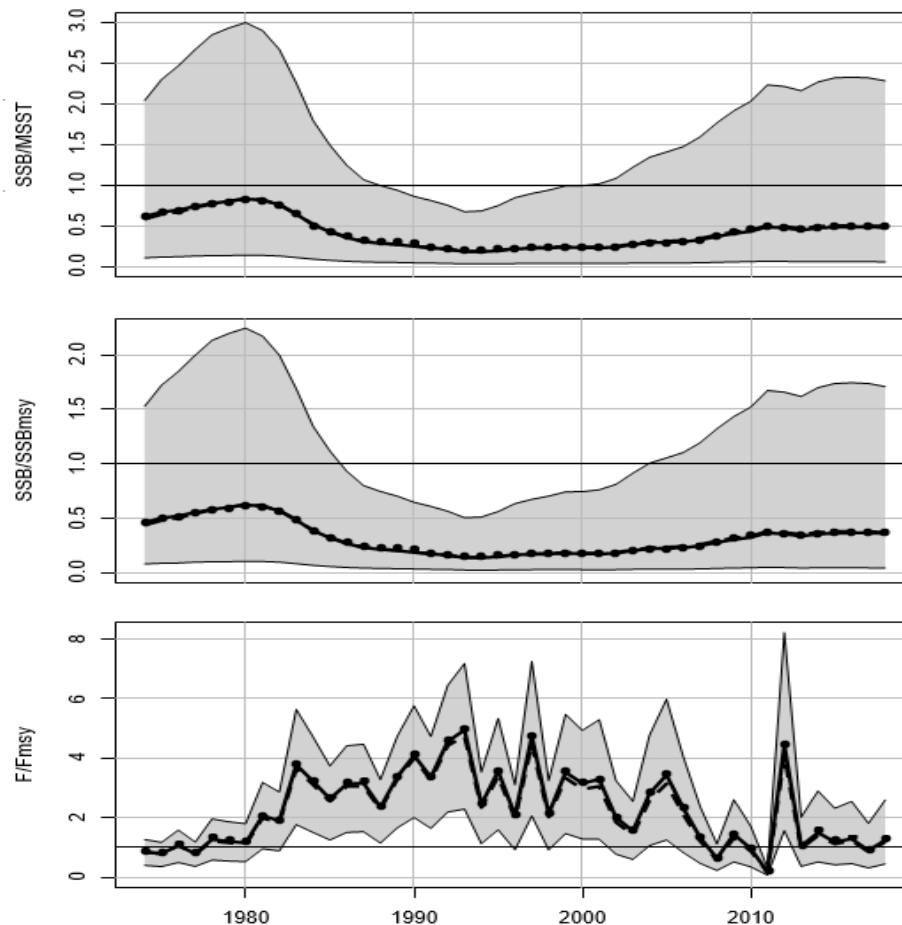
In 2013, the stock was assessed through SEDAR 36. This assessment indicated that the South Atlantic stock of snowy grouper remained overfished and was no longer experiencing overfishing. Through Regulatory Amendment 20, the Council and NMFS revised the rebuilding

**History of Snowy Grouper Stock Status**

| Assessment             | Overfished | Overfishing |
|------------------------|------------|-------------|
| SEDAR 4 (2006)         | X          | X           |
| SEDAR 36 (2013)        | X          |             |
| SEDAR 36 Update (2020) | X          | X           |

strategy, and modified the annual catch limits (ACL), recreational bag limit, and recreational season.

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 South Atlantic snowy grouper stock is overfished and is experiencing overfishing (**Figure 1**). The Council's Scientific and Statistical Committee (SSC) reviewed the SEDAR 36 Update (2020) 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>; if less than 1, stock is overfished. 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, the Council 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.

Assessment Link: [http://sedarweb.org/docs/suar/2020\\_SEDAR36U\\_SAR\\_November2020.pdf](http://sedarweb.org/docs/suar/2020_SEDAR36U_SAR_November2020.pdf)

## Proposed management changes in this amendment

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

## Objectives for this meeting

- Provide guidance on alternatives 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     |
| September 2021       | Review options paper and provide guidance to staff                              |
| October 2021         | Obtain input from AP  |
| <b>December 2021</b> | <b>Review AP comments, review preliminary analyses, and approve for scoping</b> |

|                  |  |
|------------------|--|
| March 2022       | Review scoping comments and make needed modifications  |
| April 2022       | Obtain input from AP   |
| June 2022        | Review modifications to the amendment, AP comments, 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   |

## DRAFT Purpose and Need Statements

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

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

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 ABC and OFL for snowy grouper as total removals (including discards). These recommendations are expressed as landings in Table 1. **ABC/OFL recommendations in pounds whole weight 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 (landings) 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 units. The commercial sector ACL is monitored using gutted 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 total annual catch limit and annual optimum yield for snowy grouper to reflect the updated acceptable biological catch level

**Option 1 (No Action).** The total annual catch limit and annual optimum yield for snowy grouper is equal to the **current** acceptable biological catch level (218,848 pounds whole weight, 185,464 pounds gutted weight). The current acceptable biological catch level is inclusive of recreational estimates from the Marine Recreational Information Program’s Coastal Household Telephone Survey.

**Option 2.** The total annual catch limit and annual optimum yield for snowy grouper is equal to the **updated** acceptable biological catch level. The updated acceptable biological catch

level is inclusive of recreational estimates from the Marine Recreational Information Program’s Fishing Effort Survey.

**Option 3.** The total annual catch limit and annual optimum yield for snowy grouper is equal to 95% of the **updated** acceptable biological catch level. The updated acceptable biological catch level is inclusive of recreational estimates from the Marine Recreational Information Program’s Fishing Effort Survey.

**Option 4.** The total annual catch limit and annual optimum yield for snowy grouper is equal to 90% of the **updated** acceptable biological catch level. The updated acceptable biological catch level is inclusive of recreational estimates from the Marine Recreational Information Program’s Fishing Effort Survey.

**Option 5.** The total annual catch limit and annual optimum yield for snowy grouper is equal to 80% of the **updated** acceptable biological catch level. The updated acceptable biological catch level is inclusive of recreational estimates from the Marine Recreational Information Program’s Fishing Effort Survey.

**Table 2.** ACL, OY and ABC options of proposed action 1.

| Option               | ABC, total ACL, annual OY | Recreational landings data used |
|----------------------|---------------------------|---------------------------------|
| Option 1 (No Action) | ACL=OY=current ABC        | MRIP-CHTS                       |
| Option 2             | ACL=OY=updated ABC        | MRIP-FES                        |
| Option 3             | ACL=OY=95% updated ABC    | MRIP-FES                        |
| Option 4             | ACL=OY=90% updated ABC    | MRIP-FES                        |
| Option 5             | ACL=OY=80% updated ABC    | MRIP-FES                        |

**Table 3.** The total ACL for snowy grouper under Alternatives 1 (No Action) – 5 in gutted weight

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.

| Alternative                 | Pounds Gutted Weight |         |         |         |
|-----------------------------|----------------------|---------|---------|---------|
|                             | 2023                 | 2024    | 2025    | 2026*   |
| Alternative 1 (No Action)** | 185,464              | 185,464 | 185,464 | 185,464 |
| Alternative 2***            | 119,954              | 121,272 | 122,889 | 122,889 |
| Alternative 3***            | 113,956              | 115,208 | 116,745 | 116,745 |
| Alternative 4***            | 107,959              | 109,145 | 110,600 | 110,600 |
| Alternative 5***            | 95,963               | 97,018  | 98,311  | 98,311  |

\*The 2026 ACL will remain in place until modified.

\*\*Current ABC=ACL and this represents CHTS estimates where appropriate for recreational data.

\*\*\*Represents FES estimates where appropriate for recreational data.

## Discussion

- New ACLs are needed since the SSC recommended new OFL and ABC values.
- The Council has specified OY=ACL=ABC 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 lbs gw.
  - The commercial trip limit is specified in lbs gw. The conversion between lbs ww and lbs gw is 1.18 (NMFS Conversion).
  - The recreational ACL is currently specified in numbers 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 4**). The commercial split season, which allows for the incidental harvest of snowy grouper when targeting blueline tilefish, allocates 70% of the commercial ACL to January-June and 30% of the commercial ACL to July-December. This season went into effect February 2020 through Regulatory Amendment 27.

**Table 4.** Commercial landings (lbs gw) and 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<br>(closure 12/12/20)                   | 153,935      | 100.5 |
| 2019 | Jan 1 - Dec 31 (closure:<br>8/3/19)                                    | 144,315      | 105.2 |
| 2018 | Jan 1 - Dec 31 (closure:<br>7/24/18)                                   | 144,315      | 101.8 |
| 2017 | Jan 1 - Dec 31 (closure:<br>6/22/17)                                   | 135,380      | 100.3 |
| 2016 | Jan 1 - Dec 31 (closure:<br>6/14/16)                                   | 125,760      | 118.8 |
| 2015 | Jan 1 - Dec 31 (closure:<br>7/6/2015, re-opened<br>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 5**). 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 5.** Recreational landings (numbers) and the percentage of the recreational ACL landed each year from 2015-2020.

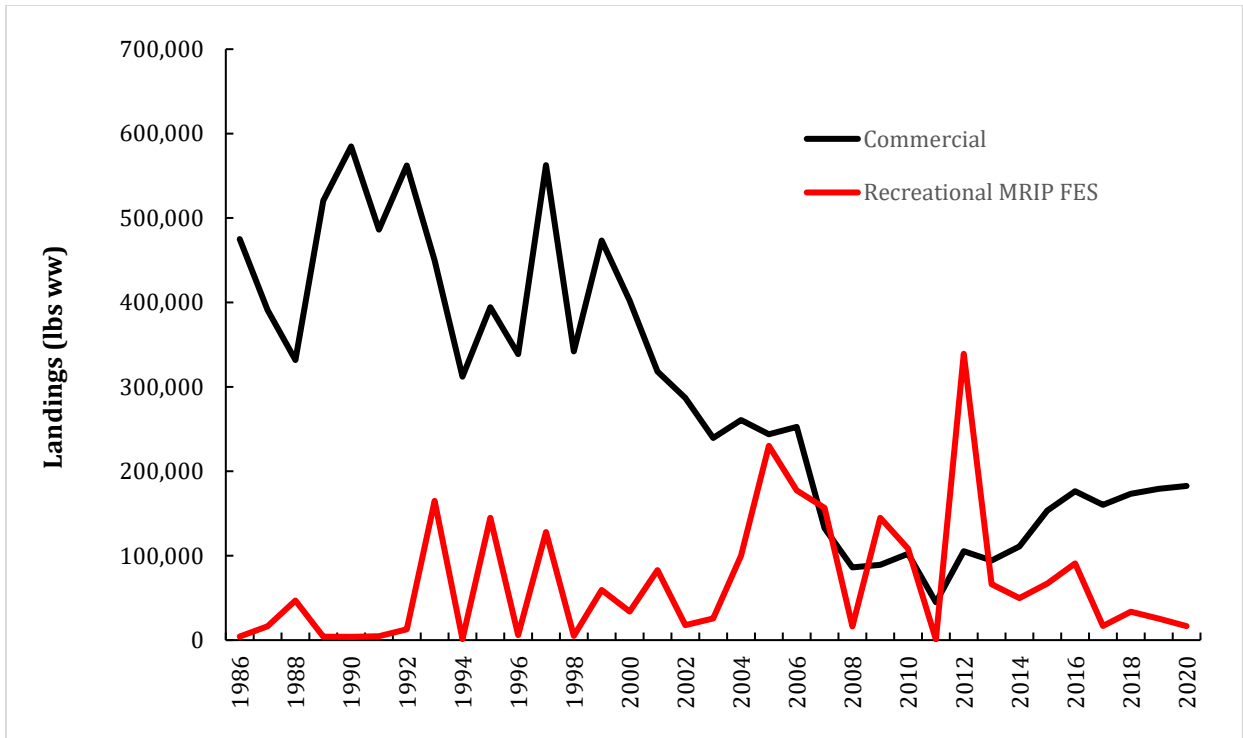
Note: Since the ACLs through 2020 were established using CHTS data, CHTS landings were used to determine the % ACL used each year from 2015-2020.

| 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** shows snowy grouper commercial and recreational landings (lbs ww) by year from 1986 through 2020. 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).

- Based on **Option 2** (ABC=ACL=OY), the following decreases from the current ACL may be observed under proposed catch levels (**Table 6**):

**Table 6.** 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 on CHTS landings.

|             | <b>Total ACL (currently 185,464 lbs gw)</b> |  | <b>Commercial ACL (153,935 lbs gw)</b>                  |
|-------------|---|--|---|
| <b>Year</b> | <b>Difference from current ACL (lbs gw)</b> | <b>Percent Difference from current ACL</b> | <b>Difference from current Commercial ACL (lbs gw)*</b> |
| 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   |

\*Assumes current commercial allocation of 83% of the total ACL

**PREVIOUS COUNCIL DIRECTION TO STAFF:** Keep recreational landings in numbers of fish

**Committee Action:**

- PROVIDE GUIDANCE ON RANGE OF OPTIONS TO DEVELOP.

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

The revised sector annual catch limits in Alternatives 1 (No Action) through 4 reflect the revised total annual catch limit in Alternative 2 of Action 1. The revised total annual catch limit includes recreational landings from the Marine Recreational Information Program using the Fishing Effort Survey method used in the latest assessment (SEDAR 36 Update 2020).

**Option 1 (No Action).** Retain the current recreational sector and commercial sector allocations as 17% and 83%, respectively, of the revised total annual catch limit for snowy grouper. Apply these percentages to the revised total annual catch limit. The percentages are based on the average landings from 1986 to 2005 using the landings dataset used in Regulatory Amendment 20 that included recreational estimates from the Marine Recreational Information Program’s Coastal Household Telephone Survey.

**Option 2.** Allocate 12.45% of the revised total annual catch limit for snowy grouper to the recreational sector and 87.55% of the revised total annual catch limit for snowy grouper to the commercial sector. This allocation is based on average landings from 1986 to 2005 using a revised dataset that is inclusive of Marine Recreational Information Program Fishing Effort Survey estimates.

**Option 3.** Allocate 26.64% of the revised total annual catch limit for snowy grouper to the recreational sector and 73.36% of the revised total annual catch limit for snowy grouper to the commercial sector. This allocation is based on applying the formula of sector annual catch limit = ((mean landings 2006-2008)\*0.5) + ((mean landings 1986-2008)\*0.5) to a revised dataset that is inclusive of Marine Recreational Information Program Fishing Effort Survey estimates.

**Table 7.** Allocation options for proposed action 2.

| Option                      | Commercial/recreational allocation | Basis for allocation            | Recreational landings used |
|-----------------------------|------------------------------------|---------------------------------|----------------------------|
| <b>Option 1 (No change)</b> | 83%/17%                            | Average landings from 1986-2005 | MRIP-CHTS                  |
| <b>Option 2</b>             | 87.55%/12.45%                      | Average landings from 1986-2005 | MRIP-FES                   |
| <b>Option 3</b>             | 26.64% 73.36%                      | Allocation formula              | MRIP-FES                   |

Note: all options applied to the revised total ACL from previous action.

**Table 8.** The commercial and recreational sector allocations for snowy grouper based on the revised total ACL=ABC from option 2 of Action 1. Recreational allocations were determined using an average weight from 2016-2018 from SEDAR 36 Update (8.93 lbs gw). The commercial season is split into two seasons. Season 1 is from January 1 – June 31 and it receives 70% of the total commercial ACL. Season 2 is from July 1 – December 31 and it receives 30% of the total commercial ACL.

\*The 2026 ACL would remain in place until modified.

| Year                             | Recreational Allocation of the Total ACL | Recreational ACL (numbers of fish) | Commercial Allocation of the Total ACL | Commercial ACL (lbs gw) | Commercial Season 1 (lbs gw) 70% | Commercial Season 2 (lbs gw) 30% |
|----------------------------------|--|------------------------------------|--|-------------------------|----------------------------------|----------------------------------|
| <b>Alternative 1 (No Action)</b> |  |                                    |  |                         |                                  |                                  |
| 2023                             | 17%                                      | 2,284                              | 83%                                    | 99,562                  | 69,693                           | 29,869                           |
| 2024                             |  | 2,309                              |  | 100,656                 | 70,459                           | 30,197                           |
| 2025                             |  | 2,339                              |  | 101,998                 | 71,399                           | 30,599                           |
| 2026*                            |  | 2,339                              |  | 101,998                 | 71,399                           | 30,599                           |
| <b>Alternative 2</b>             |  |                                    |  |                         |                                  |                                  |
| 2023                             | 12.45%                                   | 1,679                              | 87.55%                                 | 109,038                 | 76,327                           | 32,711                           |
| 2024                             |  | 1,698                              |  | 110,236                 | 77,165                           | 33,071                           |
| 2025                             |  | 1,720                              |  | 111,706                 | 78,194                           | 33,512                           |
| 2026*                            |  | 1,720                              |  | 111,706                 | 78,194                           | 33,512                           |
| <b>Alternative 3</b>             |  |                                    |  |                         |                                  |                                  |
| 2023                             | 26.64%                                   | 3,573                              | 73.36%                                 | 88,046                  | 61,632                           | 26,414                           |
| 2024                             |  | 3,612                              |  | 89,014                  | 62,310                           | 26,704                           |
| 2025                             |  | 3,661                              |  | 90,201                  | 63,141                           | 27,060                           |
| 2026*                            |  | 3,661                              |  | 90,201                  | 63,141                           | 27,060                           |

## Discussion

- Allocations need to be reviewed because recreational landings were updated in the new assessment. Recreational landings will be 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.

- A sector allocation formula was adopted through the Comprehensive ACL Amendment (SAFMC 2011) for unassessed Snapper Grouper species. This formula has also been used to allocate the total ACL for some assessed species (e.g., golden tilefish). The allocation formula was not used to determine snowy grouper allocations.
- If **Option 1 (No Action)** is selected for this proposed 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 and 3, 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 reflects 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).

**Committee Action:**

- PROVIDE GUIDANCE ON RANGE OF OPTIONS TO DEVELOP.

### 3. Consider reducing the snowy grouper commercial trip limit?

**Option 1 (No Action).** The commercial trip limit for snowy grouper is 200 pounds gutted weight.

**Option 2.** Reduce the commercial trip limit for snowy grouper to 150 pounds gutted weight.

**Option 3.** Reduce the commercial trip limit for snowy grouper to 100 pounds gutted weight.

#### Discussion

**PREVIOUS COUNCIL DIRECTION TO STAFF:** Include 150 lbs and 100 lbs gw options OR consideration of a commercial spawning season closure under Action 3 for AP discussion.

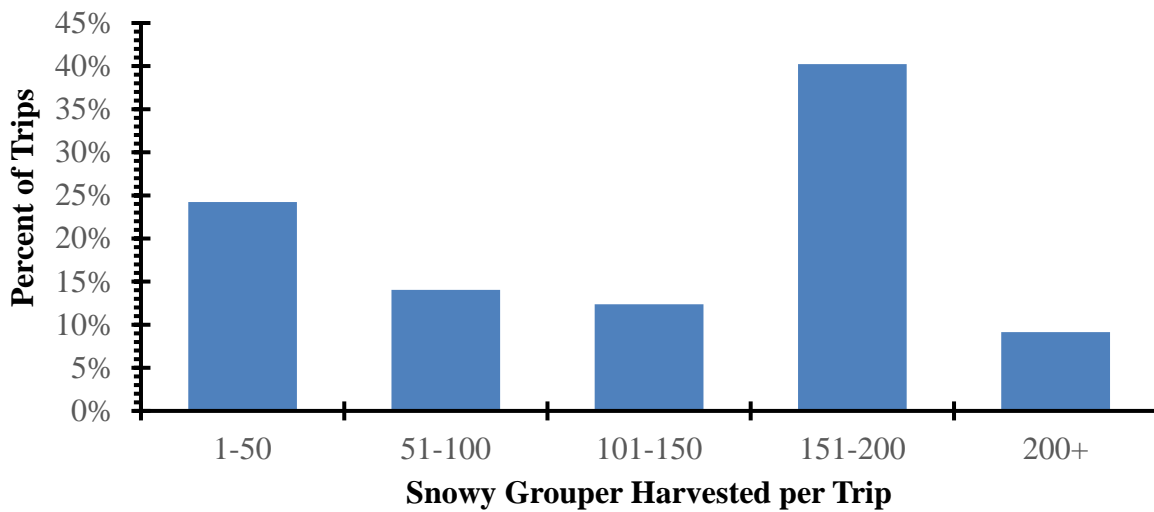
- A reduction in commercial trip limit is being considered to constrain commercial harvest to accommodate reductions in allowable harvest from the new ABC and total commercial ACL.
- The current commercial trip limit for snowy grouper is 200 lbs gw. Regulatory Amendment 20 implemented the current trip 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 1st through June 30th. The second season is from July 1st to December 31st. 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.

**Table 9.** The projected closure dates with each ACL option 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.

| <b>Option 1: 83% ACL= 99,562 lbs gw</b>     |              |                     |              |                        |
|---|--------------|---------------------|--------------|------------------------|
| Season                                      | ACL (lbs gw) | Trip Limit (lbs gw) | Closure Date | Season Length (95% CI) |
| January 1 – June 30                         | 69,693       | 200                 | April 15     | Apr 2 – May 1          |
| January 1 – June 30                         | 69,693       | 150                 | April 29     | Apr 15 – May 20        |
| January 1 – June 30                         | 69,693       | 100                 | June 3       | May 14 – No Closure    |
| July 1 – December 31                        | 29,869       | 200                 | August 20    | Aug 8 – Sep 29         |
| July 1 – December 31                        | 29,869       | 150                 | September 3  | Aug 16 – Dec 2         |
| July 1 – December 31                        | 29,869       | 100                 | October 8    | Sep 4 – No Closure     |
| <b>Option 2: 87.55% ACL= 109,038 lbs gw</b> |              |                     |              |                        |
| Season                                      | ACL (lbs gw) | Trip Limit (lbs gw) | Closure Date | Season Length (95% CI) |
| January 1 – June 30                         | 76,327       | 200                 | April 22     | Apr 8 – May 11         |
| January 1 – June 30                         | 76,327       | 150                 | May 8        | Apr 23 – May 31        |

| January 1 – June 30                        | 76,327       | 100                 | June 16      | May 25 – No Closure    |
|--|--------------|---------------------|--------------|------------------------|
| July 1 – December 31                       | 32,711       | 200                 | August 27    | Aug 12 – Oct 17        |
| July 1 – December 31                       | 32,711       | 150                 | September 11 | Aug 21 – No Closure    |
| July 1 – December 31                       | 32,711       | 100                 | October 24   | Sep 13 – No Closure    |
| <b>Option 3: 73.36% ACL= 88,046 lbs gw</b> |              |                     |              |                        |
| Season                                     | ACL (lbs gw) | Trip Limit (lbs gw) | Closure Date | Season Length (95% CI) |
| January 1 – June 30                        | 61,632       | 200                 | April 6      | Mar 23 – Apr 21        |
| January 1 – June 30                        | 61,632       | 150                 | April 19     | Apr 5 – May 6          |
| January 1 – June 30                        | 61,632       | 100                 | May 18       | May 1 – Jun 12         |
| July 1 – December 31                       | 26,414       | 200                 | August 12    | Aug 3 – Sep 14         |
| July 1 – December 31                       | 26,414       | 150                 | August 24    | Aug 10 – Oct 8         |
| July 1 – December 31                       | 26,414       | 100                 | September 21 | Aug 26 – No Closure    |

- Greater than 40% of the trips harvesting snowy grouper are estimated to have landed between 151 and 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.



**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 10.** The predicted percent change in snowy grouper commercial 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%                         |

## **Snapper Grouper AP Comments/Recommendations :**

- **Feedback:**

- *More recreational effort noticed in certain areas.*
- *Cryptic population on snowy wrecks needs to be examined.*
- *Trip limits need enforcement to be effective.*

- **AP Recommendations:**

- *The AP would like to try to keep fishery open as long as possible, modify trip limits to reduce effort*
  - *There was concern that a trip limit reduction may not make the trip to snowy depths worth it*
- *The AP prefers for the 200 lbs trip limit*

## **Committee Action:**

- PROVIDE GUIDANCE ON RANGE OF OPTIONS TO DEVELOP.



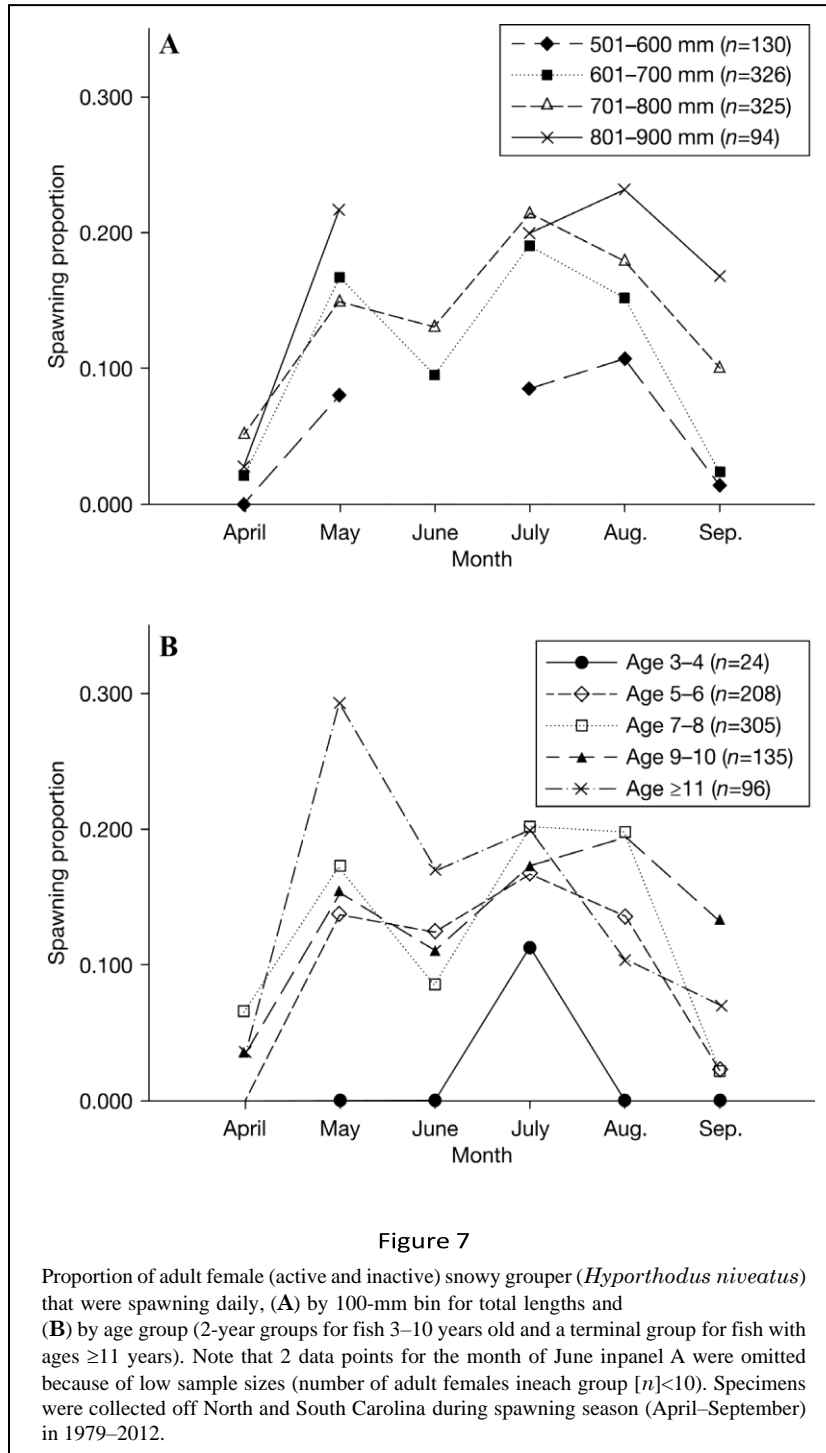
#### 4. Consider a commercial spawning season closure?

- A spawning season closure could be considered to allow snowy grouper an increased chance of spawning before they may be harvested and decrease fishing pressure on snowy grouper when they are spawning.
- Farmer et al. (2017) noted that snowy grouper spawn from January through October. The authors considered peak spawning (based on gonadosomatic index) to occur May through August (**Table 11**).

**Table 11.** Timing of spawning (gray shading) and peak spawning (black shading) for exploited Atlantic Ocean reef fish stocks off the southeastern United States. Months in bold denote core SERFS core fishery-independent sampling months. Source: Farmer et al. (2017)

| Stock                  | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Citation         |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------|
| Gray triggerfish       |     |     |     |     |     |     |     |     |     |     |     |     | [10]             |
| Greater amberjack      |     |     |     |     |     |     |     |     |     |     |     |     | [7]              |
| White grunt            |     |     |     |     |     |     |     |     |     |     |     |     | [14, 17]         |
| Cubera Snapper         |     |     |     |     |     |     |     |     |     |     |     |     | WDH, pers. comm. |
| Red snapper            |     |     |     |     |     |     |     |     |     |     |     |     | [17, 18]         |
| Vermilion snapper      |     |     |     |     |     |     |     |     |     |     |     |     | [2, 17]          |
| Blueline tilefish      |     |     |     |     |     |     |     |     |     |     |     |     | [6]              |
| Tilefish               |     |     |     |     |     |     |     |     |     |     |     |     | [4, 17]          |
| Black sea bass         |     |     |     |     |     |     |     |     |     |     |     |     | [15, 17]         |
| Gag                    |     |     |     |     |     |     |     |     |     |     |     |     | [13, 17]         |
| Red grouper            |     |     |     |     |     |     |     |     |     |     |     |     | [1]              |
| Scamp (NC)             |     |     |     |     |     |     |     |     |     |     |     |     | [12]             |
| Scamp (FL)             |     |     |     |     |     |     |     |     |     |     |     |     | [5]              |
| Scamp (29.95–32.95 °N) |     |     |     |     |     |     |     |     |     |     |     |     | [8, 17]          |
| <b>Snowy grouper</b>   |     |     |     |     |     |     |     |     |     |     |     |     | [16, 19]         |
| Speckled hind          |     |     |     |     |     |     |     |     |     |     |     |     | [20]             |
| Warsaw Grouper         |     |     |     |     |     |     |     |     |     |     |     |     | [11, 17]         |
| Red porgy              |     |     |     |     |     |     |     |     |     |     |     |     | [3, 17]          |

- Kolmos et al. (2019) indicate that snowy grouper spawning occurs January through October and April through September respectively (**Figure 4**).



**Figure 4.** Spawning proportion by month. Source: Kolmos et al. (2019)

## **Snapper Grouper AP Comments/Recommendations :**

- **Feedback:**

- *April and May are important times for snowy when SWG are closed*
- *Snowy grouper is often a “top-off” species, keeping them open early in the year is crucial, if there is a spawning closure it would be better to have it later in the year*
- *May need to consider geographical changes in spawning*

- **AP Recommendations:**

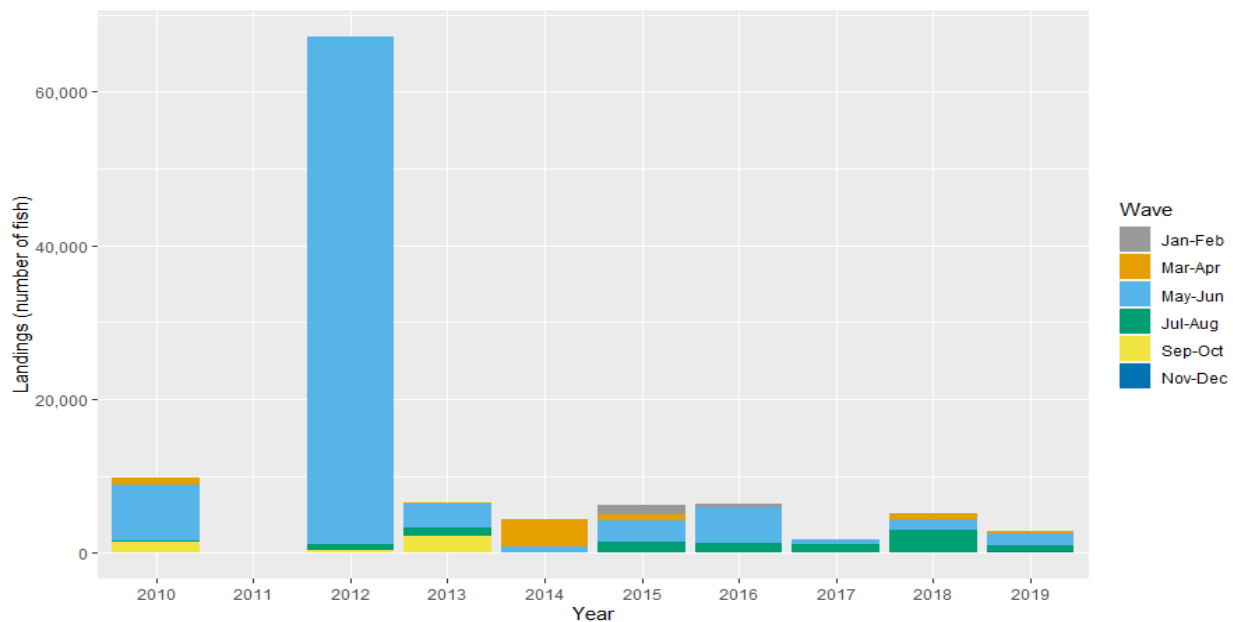
- *Prefer a spawning closure to retain the current 200 lbs trip limit*
- *Modify recreational season so it does not coincide with peak spawning*

## **Committee Action:**

- PROVIDE GUIDANCE ON RANGE OF OPTIONS TO DEVELOP.
  - WOULD THE COUNCIL LIKE TO HAVE AN ACTION IN THIS AMENDMENT THAT CONSIDERS A SPAWNING SEASON CLOSURE?
  - IF SO, WHAT ALTERNATIVES SHOULD THE IPT ANALYZE?

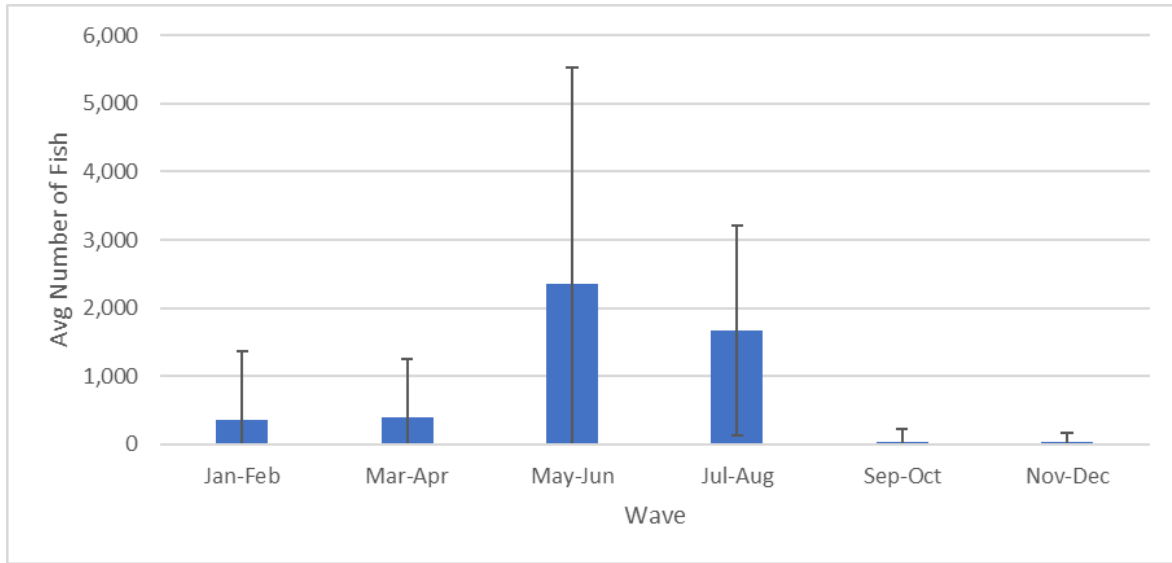
## 5. Modify recreational management measures?

- The Council may want to consider modifications to recreational management measures to constrain recreational harvest to the proposed reduce recreational ACL.
- 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 per day.
- 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<sup>1</sup>. 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 12**). 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/North Carolina border.

<sup>1</sup> Note that the SERO ACL Monitoring webpage does not include snowy grouper landings from Monroe County, FL which were included in the landings stream as part of SEDAR 36 (2013) and SEDAR 36 Update (2020).



**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 12.** 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                     |

- Based on the landings in **Table 12**, the following recreational season lengths would be predicted under the proposed reduced recreational ACL:

**Table 13.** The predicted recreational season length based on landings from 2015-2019 for each potential allocation scenario and the current recreational season of May 1<sup>st</sup> – August 31st.

Allocations are based on ACL=ABC for Action 1.

Note: the current recreational season is shown as 2 waves in table 12.

| Year                             | Recreational Allocation | Recreational ACL (numbers of fish) | Predicted Season Length* |
|----------------------------------|-------------------------|------------------------------------|--------------------------|
| <b>Alternative 1 (No Action)</b> |                         |                                    |                          |
| 2023                             | 17%                     | 2,284                              | ~ 1 wave                 |
| 2024                             |                         | 2,309                              | ~ 1 wave                 |
| 2025                             |                         | 2,339                              | ~ 1 wave                 |
| 2026                             |                         | 2,339                              | ~ 1 wave                 |
| <b>Alternative 2</b>             |                         |                                    |                          |
| 2023                             | 12.45%                  | 1,679                              | < 1 wave                 |
| 2024                             |                         | 1,698                              | < 1 wave                 |
| 2025                             |                         | 1,720                              | < 1 wave                 |
| 2026                             |                         | 1,720                              | < 1 wave                 |
| <b>Alternative 3</b>             |                         |                                    |                          |
| 2023                             | 26.64%                  | 3,573                              | < 2 waves                |
| 2024                             |                         | 3,612                              | < 2 waves                |
| 2025                             |                         | 3,661                              | < 2 waves                |
| 2026                             |                         | 3,661                              | < 2 waves                |

**PREVIOUS COUNCIL DIRECTION TO STAFF:** Have the AP discuss any other recreational management measures other than a stamp/endorsement program, which is being considered along with recommendations from the Private Recreational Reporting Working Group.

**Snapper Grouper AP Comments/Recommendations :**

- **Feedback:**
  - *Money from stamp could be funneled into aquaculture and/or artificial structures*
  - *Monies from stamp may end up in a general fund – the AP would like to know where this money would go. They would like it to address the fishery.*
  - *Recreational fishermen are very well informed – AP does not anticipate reluctance for a stamp/endorsement*
  - *25-50\$ range stamp which coincides with reporting, anything under 100\$ would be acceptable*
  - *Need to define the universe of recreational anglers*

- *The AP noted there is a state snowy fishery off South Florida*
  - *Very accessible in FL due to technology and distance offshore*
- *Recreational effort increasing as technology advances*
- *Citizen science could help provide data on participation*
- *Recreational season is when charter parties are interested in fishing due to good weather*
- *The current charter reporting data needs to be examined if need be*
- *Discard mortality is a concern for this species. Bag limit controls trip length*
  - *Day saver species*
  
- **AP Recommendations:**
  - *Stamp/permit needed (private recreational only)*
  - *Snowy grouper needs a census due to low intercepts*

**Committee Action:**

- PROVIDE GUIDANCE ON RANGE OF OPTIONS TO DEVELOP.

## 6. Modify snowy grouper recreational accountability measures

**COUNCIL DIRECTION TO STAFF:** Review the recreational post-season accountability measures.

**Alternative 1 (No Action).** If recreational landings reach or are projected to reach the recreational annual catch limit, recreational harvest of snowy is closed for the remainder of the fishing year, regardless of stock status, unless National Marine Fisheries Service determines that no closure is necessary based on the best scientific information available.

If recreational landings exceed the recreational annual catch limit, then during the following fishing year recreational landings will be monitored for a persistence in increased landings. If the total annual catch limit is exceeded and snowy grouper are overfished, the length of the recreational fishing season and the recreational annual catch limit are reduced by the amount of the recreational annual catch limit overage.

**Alternative 2.** For the snowy grouper recreational sector, National Marine Fisheries Service will annually announce the recreational fishing season start and end dates in the *Federal Register* and by other methods, as deemed appropriate. The fishing season will start on (date) and end on the date National Marine Fisheries Service projects the recreational annual catch limit will be met

**Alternative 3.** If recreational landings exceed the recreational annual catch limit, reduce the length of the following year’s recreational fishing season by the amount necessary to prevent the recreational annual catch limit from being exceeded in the following year. However, the length of the recreational season will not be reduced if the Regional Administrator determines, using the best scientific information available, that it is not necessary

**Table 14.** A summary of accountability measures within each alternative for Action 6

|                                  | In-Season AM  |                                    | Post Season AM   |  |
|----------------------------------|---|------------------------------------|--|--|
|                                  | Triggers  | AM                                 | Triggers   | AM   |
| <b>Alternative 1 (no action)</b> | Recreational landings reach/projected to reach recreational ACL | Current recreational season closes | <ul style="list-style-type: none"> <li>• Recreational landings exceed recreational ACL</li> <li>• Total ACL exceeded</li> <li>• Stock is overfished</li> </ul> <p><i>*All 3 must occur for AM to take effect</i></p> | <ul style="list-style-type: none"> <li>• Recreational ACL for the following year reduced by the recreational overage</li> <li>• Recreational season for the following year is reduced by the amount of the recreational overage</li> </ul> |



|                             |  |  |  |
|-----------------------------|--|--|--|
| <p><b>Alternative 2</b></p> | <p>NMFS will annually announce the recreational fishing season start and end dates</p> |  |  |
| <p><b>Alternative 3</b></p> | <p>NONE</p>  | <p>Recreational landings exceed recreational ACL</p> | <p>Recreational season for the following year is reduced by the amount necessary to prevent the recreational ACL from being exceeded</p> |

**Discussion**

- Modifications to the recreational accountability measures could be considered to separate commercial and recreational accountability measure triggers and establish viable accountability measure for the recreational sector.
- Snowy grouper currently has a recreational in-season accountability measure; however this is not effective for constraining recreational landings to the ACL due to the season length and the timeliness of recreational data availability.

**Snapper Grouper AP Comments/Recommendations :**

- **Feedback:**
  - *Commercial also has reporting accountability tied to the permit. Both sectors should have functioning in-season closures*
- **AP Recommendations**
  - *The AP would like to keep the current triggers for the AM in place due to small recreational landings*
  - *Possibly reallocate recreational underage to the commercial sector in the following year, looking for equity between the sectors*
  - *Adding additional recreational AM restrictions is not advised by the AP*

**Committee Action:**

- PROVIDE GUIDANCE ON RANGE OF OPTIONS TO DEVELOP.
  - CURRENTLY THE ACCOUNTABILITY MEASURE DEPENDS ON BOTH SECTORS REACHING THE ACL TO TRIGGER THE POST SEASON AM, SHOULD THE SECTOR AMS BE SEPARATED?

## Literature Cited

Heyman, W. D., Grüss, A., Biggs, C. R., Kobara, S., Farmer, N. A., Karnauskas, M., Lowerre-Barbieri, S., & Erisman, B. (2019). Cooperative Monitoring, assessment, and management of fish spawning aggregations and associated fisheries in the U.S. Gulf of Mexico. *Marine Policy*, *109*, 103689. <https://doi.org/10.1016/j.marpol.2019.103689>

Kolmos, K., Wyanski, D., White, B., & Mikell, P. P. (2019). Temporal changes in the life history of Snowy Grouper (*Hyporthodus niveatus*) off North and South Carolina, and factors that influence spawning dynamics. *Fishery Bulletin*, *117*(4), 308–321. <https://doi.org/10.7755/fb.117.4.4> Appendix

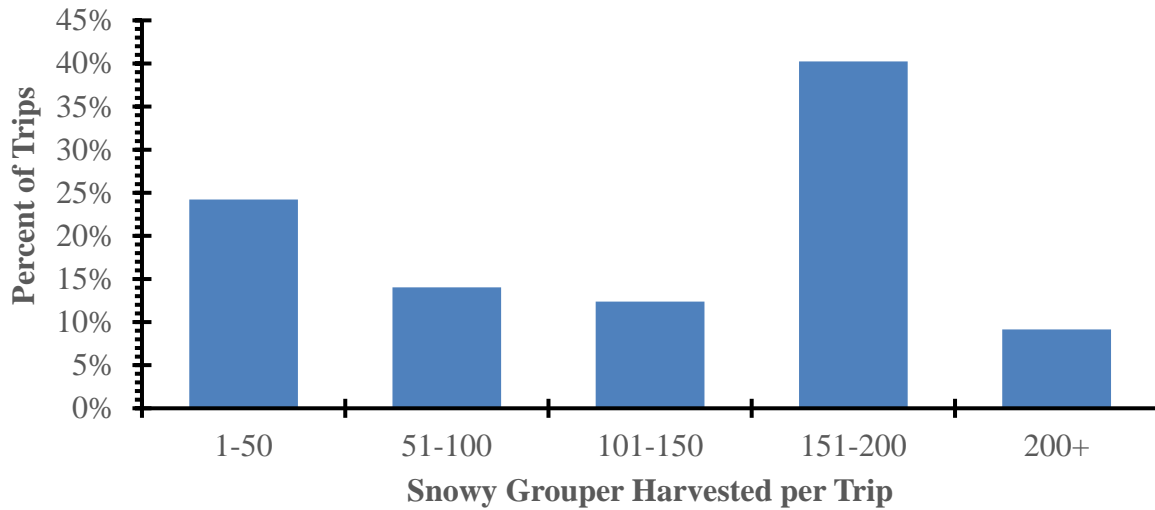
# Appendix

## 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**.



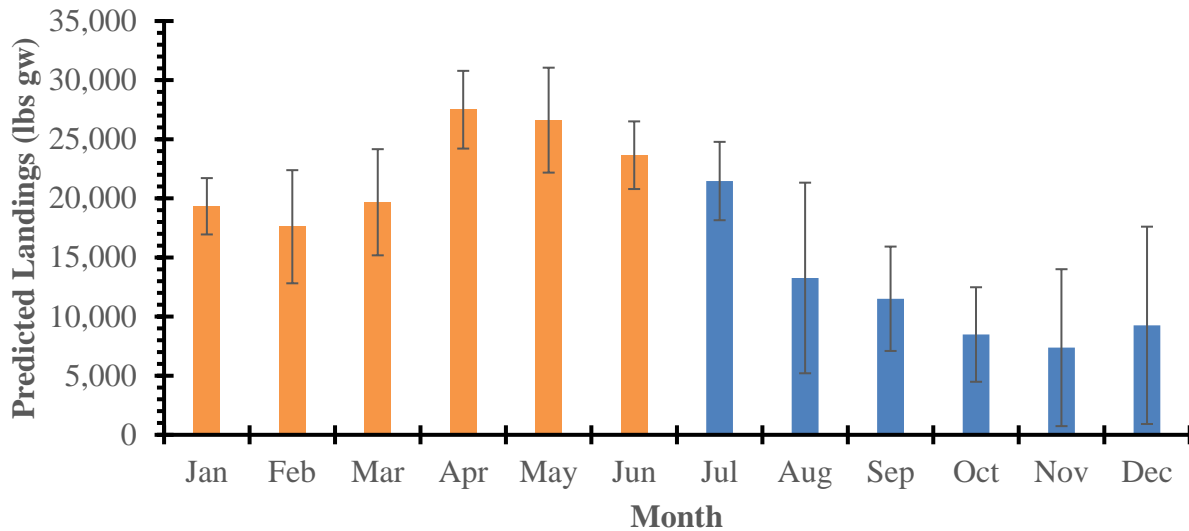
**Figure A-1.** The percent of commercial trips (n=3,249) harvesting snowy grouper by bin from 2016 through 2019. Source: SEFSC commercial logbook [May 6, 2021].

**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     |

## Commercial Season Closure Analysis for the Snowy Grouper Fishery

Alisha Gray; November 12, 2021

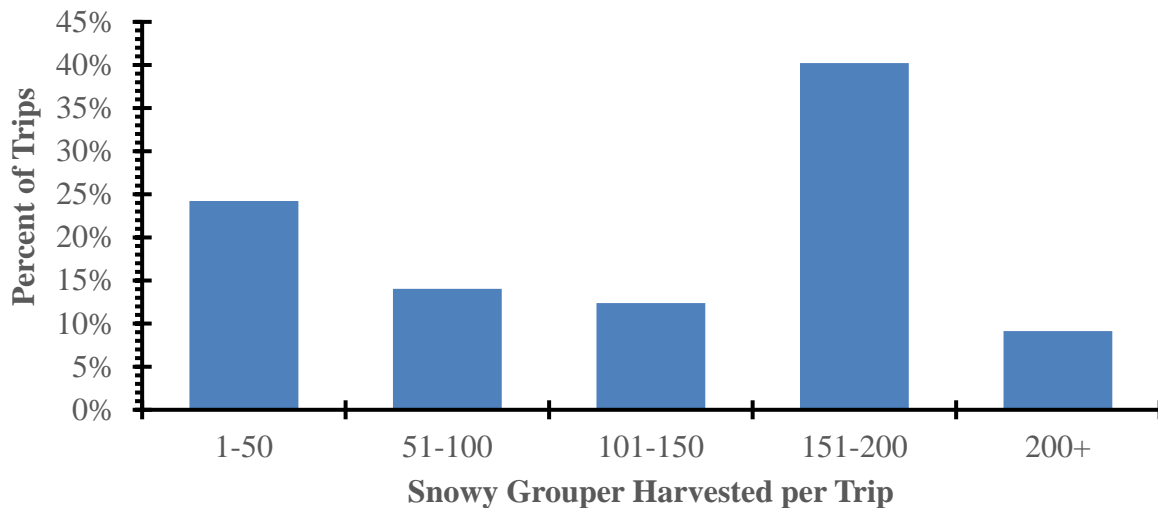
LAPP/DM Branch

Southeast Regional Office

The South Atlantic Fishery Management Council (SAFMC) manages snowy grouper in South Atlantic federal waters under the Snapper Grouper Fishery Management Plan (Snapper Grouper FMP). Amendment 51 to the Snapper Grouper FMP proposes to adjust catch levels (annual catch limits), and revise sector allocations. This analysis investigates when the commercial sector will be expected to close under the proposed ACL and sector allocation changes using observed landings in pounds (lb) gutted weight (ww) between 2015 and 2019.

### *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-3**). 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-3**.



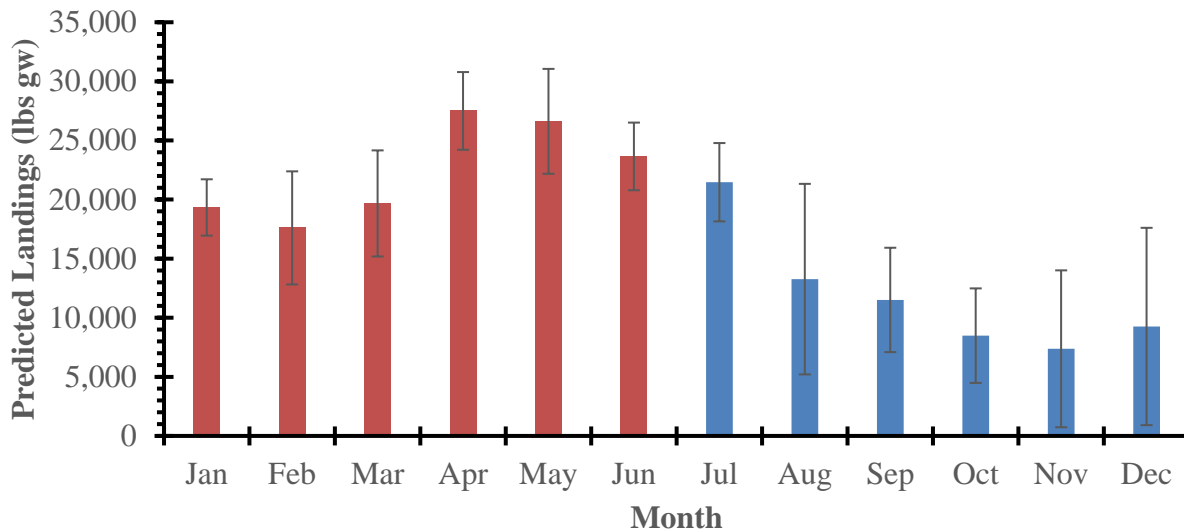
**Figure A-3.** The percent of commercial trips (n=3,249) harvesting snowy grouper by bin from 2016 through 2019. Source: SEFSC commercial logbook [May 6, 2021].

**Table A-3.** The predicted percent change in landings per trip from the current 200-lb gw trip limit.

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

*Commercial Season Length*

Final commercial landings for 2010 through 2020 were provided from the Southeast Fisheries Science Center (SEFSC) on September 29, 2021. Monthly South Atlantic commercial snowy grouper landings were averaged from 2017 through 2019 to project future landings for January through May months. Due to fishery closures in months June through December 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 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. Changes to the commercial fishing year in response to regulatory amendment 27 are assumed to have minimal impact on monthly fishing behavior, and no additional adjustments were made to monthly landings to project future landings. Predicted landings are presented in **Figure A-4**. Season lengths were projected using daily catch rates with upper and lower 95% confidence intervals with the different trip limit options (**Table A-4**).



**Figure A-4.** The predicted monthly snowy grouper landings (lbs gw) based on current trip limits with 95% confidence interval. Source: SEFSC commercial ACL file [September 29, 2021].

**Table A-4.** The projected closure dates with each ACL option 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.

| <b>Option 1: 83% ACL= 99,562 lbs gw</b>     |                 |                        |              |                           |
|---|-----------------|------------------------|--------------|---------------------------|
| Season                                      | ACL<br>(lbs gw) | Trip Limit<br>(lbs gw) | Closure Date | Season Length<br>(95% CI) |
| January 1 – June 30                         | 69,693          | 200                    | April 15     | Apr 2 – May 1             |
| January 1 – June 30                         | 69,693          | 150                    | April 29     | Apr 15 – May 20           |
| January 1 – June 30                         | 69,693          | 100                    | June 3       | May 14 – No Closure       |
| July 1 – December 31                        | 29,869          | 200                    | August 20    | Aug 8 – Sep 29            |
| July 1 – December 31                        | 29,869          | 150                    | September 3  | Aug 16 – Dec 2            |
| July 1 – December 31                        | 29,869          | 100                    | October 8    | Sep 4 – No Closure        |
| <b>Option 2: 87.55% ACL= 109,038 lbs gw</b> |                 |                        |              |                           |
| Season                                      | ACL<br>(lbs gw) | Trip Limit<br>(lbs gw) | Closure Date | Season Length<br>(95% CI) |
| January 1 – June 30                         | 76,327          | 200                    | April 22     | Apr 8 – May 11            |
| January 1 – June 30                         | 76,327          | 150                    | May 8        | Apr 23 – May 31           |
| January 1 – June 30                         | 76,327          | 100                    | June 16      | May 25 – No Closure       |
| July 1 – December 31                        | 32,711          | 200                    | August 27    | Aug 12 – Oct 17           |
| July 1 – December 31                        | 32,711          | 150                    | September 11 | Aug 21 – No Closure       |
| July 1 – December 31                        | 32,711          | 100                    | October 24   | Sep 13 – No Closure       |
| <b>Option 3: 73.36% ACL= 88,046 lbs gw</b>  |                 |                        |              |                           |
| Season                                      | ACL<br>(lbs gw) | Trip Limit<br>(lbs gw) | Closure Date | Season Length<br>(95% CI) |
| January 1 – June 30                         | 61,632          | 200                    | April 6      | Mar 23 – Apr 21           |
| January 1 – June 30                         | 61,632          | 150                    | April 19     | Apr 5 – May 6             |
| January 1 – June 30                         | 61,632          | 100                    | May 18       | May 1 – Jun 12            |
| July 1 – December 31                        | 26,414          | 200                    | August 12    | Aug 3 – Sep 14            |
| July 1 – December 31                        | 26,414          | 150                    | August 24    | Aug 10 – Oct 8            |
| July 1 – December 31                        | 26,414          | 100                    | September 21 | Aug 26 – No Closure       |

The reliability of these results is dependent upon the accuracy of the underlying data and input assumptions. We have attempted to create a realistic baseline as a foundation for comparisons, under the assumption that projected future landings will accurately reflect actual future landings. These closure dates are our best estimate, but uncertainty still exists as economic conditions, weather events, changes in catch-per-unit effort, fisher response to management regulations, and a variety of other factors may cause departures from any assumption.

## 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.

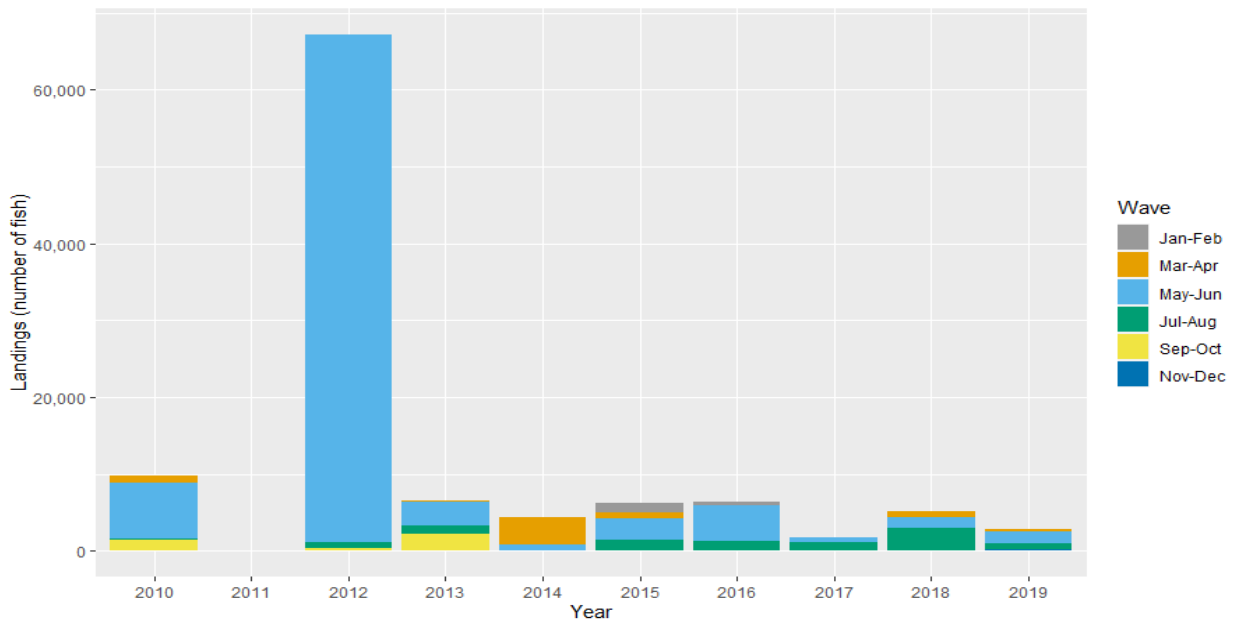


**Results**

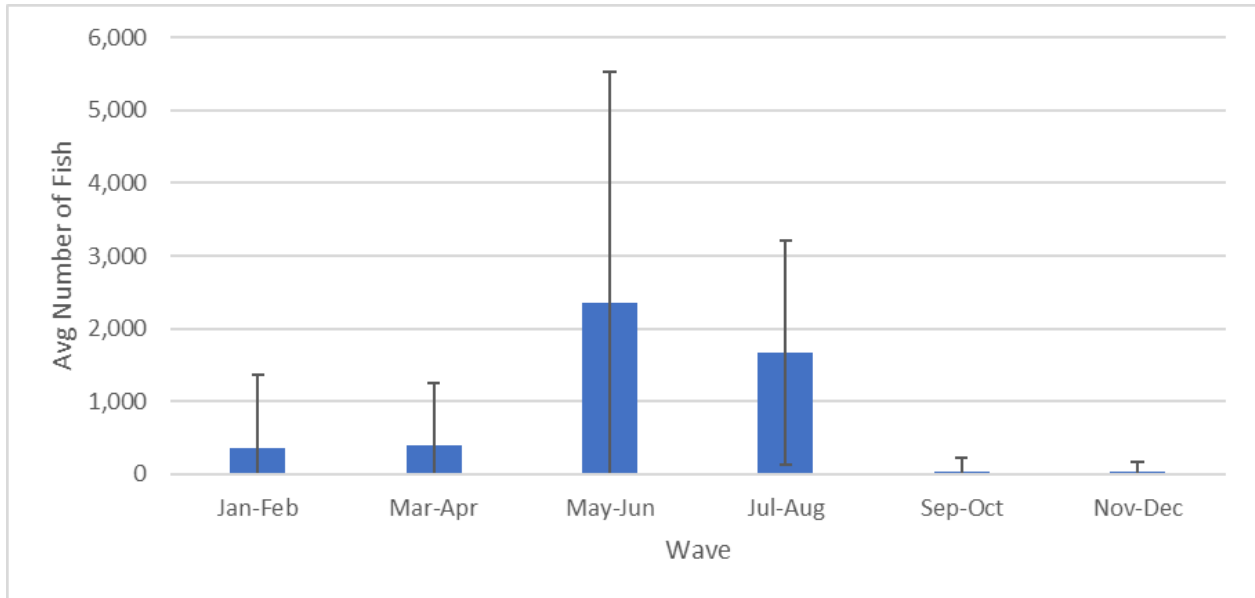
The annual recreational landings of Snowy Grouper have been less than 10,000 fish every year from 2010 to 2019 except 2012 when landings were over 60,000 fish. Charter and private recreational trips (estimated through MRIP) averaged 89% of the total recreational landings over the ten-year timeframe. 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-5**, 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-6, Table A-5**). 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-5**).



**Figure A-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 A-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 A-5.** 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

### Appendix III. Management History

**Table A-6.** The previous management measures and catch levels for South Atlantic snowy grouper.

| Management Measures                         | 2012          | 2013          | 2014          | 2015          | 2016          | 2017          | 2018          | 2019          | 2020                            | 2021                            | 2022    |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------------------------|---------------------------------|---------|
| ABC (lbs gw)                                | 87,254        | 87,254        | 87,254        | 139,098       | 151,518       | 163,109       | 173,873       | 185,464       | 185,464                         | 185,464                         | 185,464 |
| Total ACL (lbs gw)                          | 87,254        | 87,254        | 87,254        | 139,098       | 151,518       | 163,109       | 173,873       | 185,464       | 185,464                         | 185,464                         | 185,464 |
| Total Landings (lbs gw)                     |               |               |               |               |               |               |               |               |                                 | TBD                             | TBD     |
| Total ACL Overage/Underage                  |               |               |               | 134%          | 149%          | 92%           | 101%          | 94%           | 91%                             | TBD                             | TBD     |
| Com. ACL (lbs gw)                           | 82,900        | 82,900        | 82,900        | 115,451       | 125,760       | 135,380       | 144,315       | 153,935       | 153,935<br>(107,754/<br>46,181) | 153,935<br>(107,754/<br>46,181) | TBD     |
| Com. Landings (lbs gw)                      | 89,148        | 79,829        | 94,031        | 130,088       | 149,385       | 135,825       | 146,874       | 151,889       | 154,753                         | (91,092/<br>TBD)                | TBD     |
| Com. Overage/Underage (%)                   | 107.5%        | 96.3%         | 113.4%        | 112.7%        | 118.8%        | 100.3%        | 101.8%        | 105.2%        | 100.5%                          | TBD                             | TBD     |
| Rec. ACL (lbs gw)                           |               |               |               | 23,647        | 25,758        | 27,729        | 29,558        | 31,529        | 31,529                          | 31,529                          | 31,529  |
| Rec. ACL (numbers of fish)                  | 523           | 523           | 523           | 4,152         | 4,483         | 4,819         | 4,983         | 4,983         | 4,983                           | 5,315                           | 5,315   |
| Rec. Landings, "Old" MRIP (numbers of fish) | 2,065         | 2,048         | 1,214         | 1,621         | 9,746         | 1,834         | 2,766         | 1,946         | 1,309                           | 770                             | TBD     |
| Rec. Overage/Underage                       | 395%          | 392%          | 232%          | 39%           | 217%          | 38%           | 56%           | 39%           | 26%                             | 14%                             | TBD     |
| Rec. Bag Limit                              | 1/person/day  | 1/person/day  | 1/person/day  | 1/vessel/day  | 1/vessel/day  | 1/vessel/day  | 1/vessel/day  | 1/vessel/day  | 1/vessel/day                    | TBD                             | TBD     |
| Rec. Season                                 | calendar year | calendar year | calendar year | May - Aug     | May - Aug     | May - Aug     | May - Aug     | May - Aug     | May - Aug                       | TBD                             | TBD     |
| Rec Allocation                              | 5%            | 5%            | 5%            | 17%           | 17%           | 17%           | 17%           | 17%           | 17%                             | TBD                             | TBD     |
| Com. Trip Limit (lbs gw)                    | 100           | 100           | 100           | 200           | 200           | 200           | 200           | 200           | 200                             | TBD                             | TBD     |
| Com. Season                                 | calendar year | calendar year | calendar year | calendar year | calendar year | calendar year | calendar year | calendar year | calendar year (season)          | TBD                             | TBD     |

|                         |     |     |     |     |     |     |     |     |                |     |     |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|----------------|-----|-----|
|                         |     |     |     |     |     |     |     |     | 1/season<br>2) |     |     |
| <b>Com. Allocations</b> | 95% | 95% | 95% | 83% | 83% | 83% | 83% | 83% | 83%            | TBD | TBD |

## Appendix IV. Commercial Accountability Measures

- 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.
- If recreational landings for snowy grouper, as estimated by the SRD, exceed the recreational ACL, then during the following fishing year recreational landings will be monitored for a persistence in increased landings, and if necessary, the AA will file a notification with the Office of the Federal Register to reduce the length of the recreational fishing season and the recreational ACL by the amount of the recreational ACL overage, if snowy grouper are overfished based on the most recent Status of U.S. Fisheries Report to Congress, and if the combined commercial and recreational ACL specified in § 622.193(b)(1)(iii) is exceeded during the same fishing year. NMFS will use the best scientific information available to determine if reducing the length of the recreational fishing season and recreational ACL is necessary. When the recreational sector is closed as a result of NMFS reducing the length of the recreational fishing season and ACL, the bag and possession limits for snowy grouper in or from the South Atlantic EEZ are zero.