

# **SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL**

## **SCIENTIFIC AND STATISTICAL COMMITTEE**



**SSC Meeting Final Report**

**February 11, 2022**

**Meeting via Webinar**

**VERSION  
FINAL  
February 21, 2022**

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**Documents:**

- Attachment 1. Minutes of the October 2021 meeting
- Attachment 2. SAFMC Public Comment Process
- Attachment 3a. SEDAR 71 Gag: New Projections Presentation
- Attachment 3b. SEDAR 71 Gag: New Projections Report

## **SAFMC PUBLIC COMMENT PROCESS**

### **Written comment:**

Written comment on SSC agenda topics is provided to the Committee through an [online form](#), similar to all other Council briefing materials at [this link](#). For this meeting, the deadline for submission of written comment is 12:00 pm EST on Friday, February 11, 2022. No written comment was received.

### **Verbal comment:**

Three opportunities for comment on agenda items were provided. See meeting minutes.

### **Meeting Format:**

This meeting was held as a half-day webinar on Friday, February 11, 2022 from 8:30 am – 11:30 am EST.

## 1. INTRODUCTION

### 1.1. Documents

- SSC February 2022 Agenda
- Attachment 1. Minutes of the October 2021 meeting

### 1.2. Action

- Introductions
  - *New member Dr. Kai Lorenzen was welcomed.*
- Review and Approve Agenda
  - *Agenda approved with addition to Other Business of a discussion of the Data Limited Working Group.*
- Approve Minutes
  - *Minutes were approved without edits.*

## 2. PUBLIC COMMENT

The public is provided this comment period for any general comments pertaining to any items on the agenda. There will also be time provided for public comment during each specific agenda item as they are discussed. Those wishing to make comment should indicate their desire to do so to the Committee Chair.

### 2.1. Documents

- Attachment 2. SAFMC Public Comment Process

*No public comment was provided.*

## 3. SEDAR 71 GAG GROUPER PROJECTIONS REVIEW

### 3.1. Documents

- Attachment 3a. SEDAR 71 Gag: New Projections Presentation
- Attachment 3b. SEDAR 71 Gag: New Projections Report

### 3.2. Presentation

SEDAR 71 Gag Projections – Dr. Erik Williams, SEFSC

### 3.3. Overview

The SSC is asked to review new SEDAR 71 Gag catch and rebuilding projections requested by the SAFMC at the December Council meeting (Attachment 3b), provide fishing level recommendations, and discuss uncertainties. Gag was last assessed during SEDAR 71 in 2021, where the stock was found to be overfished and undergoing overfishing. The terminal (2019) base-run estimate of spawning stock was below the minimum stock size threshold ( $SSB_{2019}/MSST=0.20$ ), indicating that the stock is overfished, and the estimated terminal fishing rate based on a three-year geometric mean is above  $F_{msy}$  ( $F_{2017-2019}/F_{msy}=2.15$ ), indicating overfishing is occurring. Several rebuilding scenarios requested by the Council at the September 2021 meeting were reviewed by the SSC at their October 2021 meeting and included additional catch projections for Gag using model estimated recruitment from the stock-recruitment curve and using recent low recruitment (most recent 10-year average) scenarios, and with 70% and 50% probabilities of rebuilding in 10 years. The SSC recommended the Council select the scenario with a 70% probability of rebuilding using projections that incorporate recruitment estimates from the stock-recruitment curve. At the December 2021 meeting, the Council requested the SSC review an additional projection scenario with a 60% probability of rebuilding in 10 years using recruitment estimated by the model.

### 3.4. Public Comment

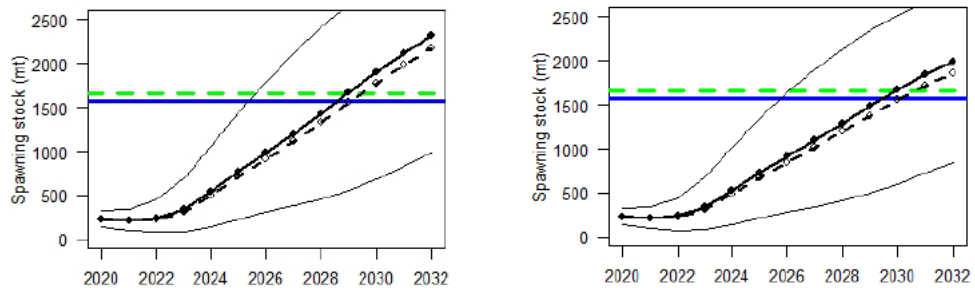
*No public comment was provided.*

### 3.5. Action

- Provide fishing level recommendations
  - Discuss the 10-year rebuilding probabilities at 70% and 60%. What are the potential consequences of adopting  $P_{rebuild}$  of 60% over the SSC-recommended  $P_{rebuild}$  of 70%?
    - *The SSC continues to recommend fishing levels for the gag grouper stock be set using a probability of rebuilding ( $P_{rebuild}$ ) = 70% for the following reasons:*
      - *The stock is grossly overfished and undergoing overfishing. The terminal year (2019) base-run estimate of spawning stock was well below the minimum stock size threshold ( $SSB_{2019}/MSST=0.20$ ).*
      - *Although it is possible neither  $P_{rebuild}$  scenario will result in a rebuilt stock in 10 years, the SSC emphasized that the lower the  $F$  target adopted, the greater the chance of rebuilding.*
      - *Both rebuilding projections ( $P_{rebuild}$  = 60% and 70%) are reliant upon the stock-recruitment relationship being accurate for forecasting future stock productivity. The SSC previously noted that the stock-recruitment relationship and the assessment may be overestimating recruitment, particularly at current low stock size. For the rebuilding plan to be successful, it will be essential to monitor and assess gag recruitment from 2021 and beyond to*

- ensure recruitment levels assumed in the projections used to set catch levels are actually achieved.*
- *Changes in regulations to protect larger fecund females or larger males (and/or balanced sex ratios) could help to increase the probability of improved recruitment and stock rebuilding.*
  - *The primary risk in choosing  $P_{rebuild} = 60\%$  over  $70\%$  is that  $P_{rebuild} = 60\%$  may not allow the stock to rebuild on schedule.*
    - *Adopting a  $P_{rebuild}$  of  $70\%$  is more likely to ensure successful rebuilding. Median SSB ( $S_{med}$ ) is projected to be nearly 100mt (~10%) higher within five years (2027) of the start of management when based on the  $P_{rebuild} = 70\%$  scenario vs the  $P_{rebuild} = 60\%$  scenario (1,115mt vs 1,021mt), and more than 300mt (>16%) higher after ten years in 2032 (2,181mt for the  $P_{rebuild} = 70\%$  scenario vs 1,867mt for the  $P_{rebuild} = 60\%$  scenario). See Tables 2 and 3 in “Projections for South Atlantic Gag Grouper SEDAR 71 Stock Assessment (January 16, 2022)”.*

*In addition, the lower bound of projected spawning stock biomass (SSB) estimated in the  $P_{rebuild} = 70\%$  scenario is higher relative to the  $P_{rebuild} = 60\%$  scenario, indicating a higher probability of improved spawning stock biomass even under the worst case recruitment conditions. See figures below.*



Benefits gained through increased spawning stock biomass at the end of the rebuilding timeframe by adopting  $P_{rebuild} = 70\%$  left vs  $P_{rebuild} = 60\%$  (right). Figures from *Projections for South Atlantic Gag Grouper SEDAR 71 Stock Assessment (January 16, 2022)* Figures 4 and 6.

- *Given that the terminal year of the assessment was 2019, three fishing seasons will have elapsed before management action is taken during which fishing mortality continued to exceed sustainable levels.*
- *Current projections used to estimate  $P_{rebuild}$  do not account for variability in fishing mortality ( $F$ ).*
- *It is unclear if the projected fishing mortalities are attainable given changes that are likely to occur in the fishery in response to management action (e.g., changes in discard mortality).*

- *The SSC noted that a cost-benefit analysis could be conducted to determine economic impacts of changes in landings for each  $P_{rebuild}$  scenario.*
  - *The difference between  $P_{rebuild}$  projections of 70% vs 60% contains 86% of discounted landings. In other words, the future value of projected landings under the 70% rebuilding scenario across the 10-year rebuilding timeframe is 86% of the value of future landings under the 60% rebuilding scenario.*
  - *The  $P_{rebuild} = 70\%$  scenario has reduced uncertainty in the landings and the expected landings under  $P_{rebuild} = 70\%$  are more likely to be realized than those under  $P_{rebuild} = 60\%$ . The expected landings for each scenario should be multiplied by the probability of rebuilding.*
  - *The reduction in supply may also lead to an increase in ex-vessel price which would also help offset the decrease in gross landings.*
  - *The projected gain in harvest between the two rebuilding scenarios may not be sufficient to account for the additional uncertainty in recruitment. The short-term economic gains from adopting a  $P_{rebuild} = 60\%$  may prevent the stock from rebuilding faster.*
- *The SSC recommends that the Council maintain its rebuilding plan until the next assessment when its impact on the stock and the accuracy of  $P_{rebuild}$  projections can be evaluated.*
- Complete the catch level recommendations table using the SSC's fishing level recommendations.
  - *See Table 1 (SSC recommended  $P_{rebuild} = 70\%$ ) and Table 2 (Council alternative  $P_{rebuild} = 60\%$ ) below.*
- Comment on any difficulties encountered in applying the ABC Control Rule, including any required information that is not available.
  - *There were no difficulties in setting  $P^*$  using the ABC Control Rule.*
  - *The SSC looks forward to reviewing the recommendations of the Catch Level Projections Working Group at our April meeting to help inform future discussions of how best to project recruitment in forecasts used to set OFLs/ABCs.*



**SSC RECOMMENDATION:****Table 1.** Gag recommendations using  $P_{\text{rebuild}} = 70\%$ . Landings and discards are expressed in both numbers (1000s of fish) and gutted weight (1000s of lbs).

Criteria		Deterministic		Probabilistic	
Overfished evaluation (SSB/SSB <sub>MSY</sub> )		0.15		0.14	
Overfishing evaluation		2.15		2.27	
MFMT (F <sub>MSY</sub> )		0.37		0.35	
SSB <sub>MSY</sub> (Units)		1563.9		1659.4	
MSST (Units)		1172.9		1244.5	
MSY (1000 lbs.)		1455.1		1453.5	
ABC Control Rule Adjustment		20%			
P-Star		30%			
SSC recommended P <sub>Rebuild</sub>		70%			
M		0.15			
OFL RECOMMENDATIONS					
Year	Landed (lbs gw)	Discard (lbs gw)	Landed (number)	Discard (number)	
2023	367	42	36	10	
2024	494	48	45	11	
2025	605	54	53	13	
2026	706	60	60	14	
2027	808	64	68	15	
ABC RECOMMENDATIONS					
Year	Landed (lbs gw)	Discard (lbs gw)	Landed (number)	Discard (number)	
2023	176	19	17	5	
2024	261	22	23	5	
2025	348	26	29	6	
2026	435	29	35	7	
2027	525	32	41	7	

**COUNCIL ALTERNATIVE:****Table 2.** Gag catch level recommendations using  $P_{\text{rebuild}} = 60\%$ . Landings and discards are expressed in both numbers (1000s of fish) and gutted weight (1000s of lbs).

Criteria		Deterministic		Probabilistic	
Overfished evaluation (SSB/SSB <sub>MSY</sub> )		0.15		0.14	
Overfishing evaluation		2.15		2.27	
MFMT (F <sub>MSY</sub> )		0.37		0.35	
SSB <sub>MSY</sub> (Units)		1563.9		1659.4	
MSST (Units)		1172.9		1244.5	
MSY (1000 lbs.)		1455.1		1453.5	
Y at 75% F <sub>MSY</sub> (1000 lbs.)					
P <sub>Rebuild</sub>		60%			
M		0.15			
OFL RECOMMENDATIONS					
Year	Landed (lbs gw)	Discard (lbs gw)	Landed (number)	Discard (number)	
2023	367	42	36	10	
2024	494	48	45	11	
2025	605	54	53	13	
2026	706	60	60	14	
2027	808	64	68	15	
ABC RECOMMENDATIONS					
Year	Landed (lbs gw)	Discard (lbs gw)	Landed (number)	Discard (number)	
2023	223	25	21	6	
2024	323	28	29	7	
2025	422	33	36	8	
2026	518	37	42	9	
2027	616	40	49	9	

**4. OTHER BUSINESS**

- *Golden Tilefish – Terms of Reference*
  - *SEFSC agreed with all terms in the scope of work*
- *Data limited working group*
  - *Kai Lorenzen to join group and chair*
  - *Work will commence after schedule set by the Council at their March meeting.*
- *Greater Amberjack Count and SA Red Snapper Count projects to be presented at April SSC meeting.*
  - *SSC requested time at our April meeting to discuss potential methods that could be used to integrate these counts into assessment models and the assessment/management process.*

## **5. PUBLIC COMMENT**

*Public comment was provided. See meeting minutes.*

## **6. CONSENSUS STATEMENTS AND RECOMMENDATIONS REVIEW**

*The Committee reviewed final consensus statements and recommendations.*

*The Final SSC report will be provided to the Council on Monday, February 21, 2022 for inclusion in late materials for the March Council meeting briefing book.*

## **7. NEXT MEETINGS**

### **7.1. SSC MEETINGS**

2022 Meeting Dates:

- April 25-26: SEP in Charleston, SC
- April 26-28: SSC in Charleston, SC
- June/July 2022 (webinar) - TBD

### **7.2. SAFMC Meetings**

2022 Council Meetings

- March 7-11, 2022 in Jekyll Island, GA
- June 13-17, 2022 in Key West, FL
- September 12-16, 2022 in Charleston, SC
- December 5-9, 2022 in Wrightsville Beach, NC