

## SAFMC SSC Reports and Motions Relevant to Annual Catch Limits, 2003-2007

1. SSC Motions June 2003 (SEDAR 1,2)
2. SSC Motions May 2004 (SEDAR 4,5,6)
3. SSC BAC Goliath, Hogfish, Yellowtail Snapper Recommendations
4. SSC Motions October 2004 (SEDAR 4)
5. SSC Report May 2005 (13B and BSB Update)
6. SSC Biological Committee Report May 2005
7. SSC Report June 2006
8. SSC Report December 2006
9. SSC Report June 2007
10. SSC Motions June 2007 (SEDAR 10, VS Update)
11. SSC ACL Workgroup Report Fall 2007
12. SSC Report December 2007
13. SSC Motions December 2007 (More on SEDAR 10, VS Update)
14. SSC Report June 2008
15. SSC Motions June 2008 (SEDAR 15)
16. SSC Report December 2008
17. SSC Motions December 2008 (SEDAR 16, 17)

SAFMC SSC, June 2003, Cocoa Beach Florida.

1. Motion to support the recommendation that these (red porgy, vermillion snapper, black seabass) assessments are adequate for management, to certify them. Blount/Harris, approved.

2. Motion that SSC adopt these recommendations:

The recommendations for red porgy are as follows: The committee recommends that the council adopt the SFA benchmarks as recommended by the SEDAR review panel.

The second recommendation: The committee recommends that the council continue regulations to restrict fishing mortality to a level projected to rebuild the stock within 18 years, which would be by 2016.

The third recommendation: The committee recommends that the council consider discard losses of red porgy in developing management regulations to improve the chance of the stock recovering within the stated period.

Motion made by Carmichael, on behalf of SSC Bioassessment subcommittee, approved.

3. Motion that the SSC adopt the following recommendations (black seabass):

Recommendation 1; The committee recommends that if a fixed F rebuilding strategy with a constant exploitation level for the entire rebuilding period is selected, then the maximum fishing mortality threshold should be F rebuild.

The second recommendation: The committee recommends that a range of rebuilding strategies be considered within the bounds of the 18-year recovery period, and that the results of such an analysis be used to develop alternative maximum fishing mortality thresholds.

The third and final: The committee recommends that the council consider effort reductions (e.g. time and area closures, trap limits) and moderate trip and possession limits to reduce fishing mortality to reduce the chances of excessive discards.

Motion made by Carmichael, on behalf SSC Bioassessment subcommittee, approved

4. Motion to approve the following recommendations (Vermillion snapper):

First, the committee recommends that the council adopt F max as a proxy for FMSY;

Second, the committee recommends that the council not adopt stock biomass and yield benchmarks at this time;

Third, the committee recommends that generalized management measures be used to reduce fishing mortality in vermilion snapper; and

Fourth and final, the committee recommends that the council consider increasing the recreational minimum size limit (to be equivalent with the commercial size limit).

Motion made by Carmichael, on behalf SSC Bioassessment subcommittee, approved

5. Motion that the (king mackerel assessment update for 2003) is based on the best available scientific data for the stock assessment. Gregory/Blount, approved.

**SCIENTIFIC & STATISTICAL COMMITTEE  
MOTIONS  
MAY 19, 2004  
CHARLESTON, SC**

**I. MACKEREL MOTIONS:**

1. Landings - important to have most recent data
2. Discards - recreational and commercial bycatch data should be incorporated in the assessment; shrimp trawl bycatch data should be used if viable (DW recommended using the discard data.)
3. Growth curves/data - should have used "newer" growth data rather than "old" data (DW recommended using newer growth data.). Incorporate the new data in the assessment.
4. Natural Mortality - DW recommended 0.2 (0.15-0.25) for both groups. RW rejected this and used existing ranges (Gulf 0.15-0.25 with 0.2 as point estimate; Atlantic 0.1-0.2 with 0.15 as point estimate). Recommend that the RW explain why the DW recommendation was rejected; needs to be more than "consistency".
5. Fecundity - using data about 20 years old; batch vs. total spawning. Relationship between total spawning for a batch spawning fish.  
We question the use of this fecundity data. Need additional information on how data were used, implications of using the data and alternative assessment methods that would exclude the data.
6. Mixing rate - no scientific results indicate there is no mixing. RW supports 25-75% mixing but using 100% in base run.  
SSC Subcommittee recommends using a 50% mixing rate:
  - a. most defensible (values above and below 50%)
  - b. AW, RW & Chair of RW suggested 50%
  - c. sensitivities on each side (25-75 or 40-60)
  - d. use 50% for the base run
7. Alternative model structures should be considered including methods that take into account aging errors (e.g., forward projecting); whatever model is chosen should be justified.
8. ABC - along the lines of the 50% mixing run in Table 19 but need to re-run after addressing the previous recommendations (see above).  
Best point estimate and range should be provided when the assessment is re-run.
9. Risk levels - policy not scientific decision. The SSC could provide recommendations on potential outcomes based on a risk level but the Council should specify the risk level.
10. SSC recommends that the Mackerel SEDAR Assessment not be forwarded to the Council; the assessment should go back to the Assessment Workshop stage and incorporate the recommendations provided above and then to the Review Workshop.

MOTION BY GRIST, SECOND BY BELCHER  
I MAKE A MOTION TO RECOMMEND 1-10.  
APPROVED BY SSC SUBCOMMITTEE

SSC MOTION: ACCEPT SUBCOMMITTEE RECOMMENDATIONS 1-8 AND 10  
[REORDER WITH 10 BECOMING 1].

APPROVED BY SSC

1 ABSTAINING

9. Risk levels - policy not scientific decision. The SSC could provide recommendations on potential outcomes based on a risk level but the Council should specify the risk level.  
[SSC DEFERRED UNTIL NEXT SSC MEETING]

## **II. STOCK ASSESSMENT MOTIONS**

1. MOTION: A STOCK ASSESSMENT SCIENTIST, THAT ATTENDED THE AW, SHOULD BE PRESENT WHENEVER A SEDAR REPORT IS BEING REVIEWED. IF ONE IS NOT PRESENT, THE REPORT WILL NOT BE REVIEWED BY THE SSC.

APPROVED BY SSC SUBCOMMITTEE

APPROVED BY THE SSC [INTENT - PERSON BE PRESENT FOR  
SUBCOMMITTEE & FULL SSC]

2. MOTION: A “ROAD-MAP” SHOULD BE DEVELOPED THAT OUTLINES KEY COMPONENTS OF THE MATERIALS AND WHAT IS BEING ASKED OF THE SSC PRIOR TO ANY SSC PRESENTATION, DISCUSSION &/OR REVIEW. [KEY ISSUES AND WHERE IN SPECIFIC DOCUMENTS DOES THE INFORMATION OCCUR.]

APPROVED BY SSC SUBCOMMITTEE

APPROVED BY SSC

## **III. SEDAR PROCESS RECOMMENDATIONS**

1. Whenever a change is made in a subsequent panel meeting (e.g., from DW to AW), detailed documentation, rationale and references should be provided.
2. Need someone identified at each meeting to ensure notes are taken and documents drafted. May be able to use fellowships (students) for this function.
3. Standardized formats for each workshop stage.
4. Standardized format for presentation of AW results at RW.
5. Consistency (with past data, assessments & management) is not a criteria for decision making within the SEDAR process.
6. SEDAR is about science; decisions should not be made based on management implications.
7. If going to do a SEDAR, need to commit appropriate resources (\$, time, people) necessary to do a complete assessment. SEDAR is not the appropriate setting for assessment updates or certifying existing assessments.
8. Recommend that any assessment begin with a DW; can have alternative formats but ensure that data are reviewed by appropriate individuals.
9. Assessments should present the most appropriate model with sensitivity runs. In addition, the most recent model used should also be re-run to compare with “most appropriate model” results. Alternative models (from different classes of model) should be evaluated.

10. Panel members must attend all meetings and not leave early when they are needed and work remains to be done.
  11. SEDAR Coordinator was put in a tough position trying to correct discussions moving into management and having to run meeting.
  12. Recommend using a permanent meeting facilitator (non-voting position). CIE reviewers could then focus on reviewing the assessment.
- SSC MOTION: ADOPT 1-12 WITH EDITORIAL LICENCE TO CHAIR AND STAFF  
TO ADD JUSTIFICATION AND CLEAN UP WORDING.  
APPROVED BY SSC

SAFMC SSC Bioassessment Committee  
SEDAR 3 and 6 Recommendations

	A	B	C
1		<b>GOLIATH GROUPE</b>	
2			
3	<b>REVIEW QUESTIONS:</b>	<b>RESPONSES:</b>	
4	1. Certify the assessments, that is, are the assessments	SSC agrees best available data	
5	based upon the best available data/science and	Covers area for which data are available	
6	are the assessments adequate for management?	Motion: Effectiveness rate is critical and assessment is	
7		inadequate for management until better specified	
8	2. Based on the presented and reviewed assessments,		
9	develop advice on the magnitude and direction of action required.	Motion: Moratorium should remain at least until: (1) justifiable effectiveness	
10		rate is obtained and (2) reassess status with a new effectiveness rate.	
11	3. Interpret the assessment results and put the conclusions	see 1. Above	
12	into a biological perspective that the public and managers		
13	can understand.		
14			
15	4. Based on the research recommendations, develop guidelines	Motion: Accept research recommendations as outlined in report	
16	to clarify and expand the recommendations to better inform		
17	the Council on what needs to be done and what levels of		
18	resources and financial commitments might be necessary		
19	to satisfy these needs.		
20			
21	5. Review the SEDAR process and offer modifications/recommendation	When important assumption made, justification must be documented	
22	(e.g., standard terms of reference, contents of assessment document	in the report	
23	and necessary details from data workshop, etc.).		
24			
25	6. Clearly state what the appropriate SFA parameters are and what	Address when get revised effectiveness rate	
26	the estimated values are.	SSC Motion: Accept subcommittee recommendations, accept stock status,	
27		and request additional information on effectiveness rate before SFA	
28		parameters can be generated	
29		Approved by SSC	
30		SSC Motion: Encourage development of a research plan for a scientific fishery	
31		for goliath grouper wherever it is appropriate.	
32		Approved by SSC	
33		SSC Motion: Recommend that the Council consider education & enforcement	
34		actions to encourage that goliath grouper be released without being removed	
35		from the water.	
36		Approved by SSC	

SAFMC SSC Bioassessment Committee  
SEDAR 3 and 6 Recommendations

	A	B	C
1		<b>HOGFISH</b>	
2			
3	<b>REVIEW QUESTIONS:</b>	<b>RESPONSES:</b>	
4	1. Certify the assessments, that is, are the assessments	Motion: YPR is appropriate and acceptable for	
5	based upon the best available data/science and	management, however, the rest of analyses are not until the RW	
6	are the assessments adequate for management?	recommendations are addressed and a new assessment conducted	
7			
8	2. Based on the presented and reviewed assessments,	Motion: Agree with State of Stock and management advice in the RW report	
9	develop advice on the magnitude and direction of action required.		
10			
11	3. Interpret the assessment results and put the conclusions	address growth overfishing (refer to size limit & benefits in Assessment)	
12	into a biological perspective that the public and managers	can't address recruitment overfishing because analyses are not available	
13	can understand.		
14			
15	4. Based on the research recommendations, develop guidelines	logbook data are available and should be used	
16	to clarify and expand the recommendations to better inform	Motion: SSC accepts the list	
17	the Council on what needs to be done and what levels of		
18	resources and financial commitments might be necessary		
19	to satisfy these needs.		
20			
21	5. Review the SEDAR process and offer modifications/recommendations		
22	(e.g., standard terms of reference, contents of assessment documents,		
23	and necessary details from data workshop, etc.).		
24			
25	6. Clearly state what the appropriate SFA parameters are and what	No SFA parameters are available at this time	
26	the estimated values are.	SSC Motion: Adopt subcommittee recommendations	
27		Approved by SSC	

SAFMC SSC Bioassessment Committee  
SEDAR 3 and 6 Recommendations

	A	B	C
1		<b>YELLOWTAIL SNAPPER</b>	
2			
3	<b>REVIEW QUESTIONS:</b>	<b>RESPONSES:</b>	
4	1. Certify the assessments, that is, are the assessments		
5	based upon the best available data/science and	Motion: Accept 1.	
6	are the assessments adequate for management?		
7			
8	2. Based on the presented and reviewed assessments,	Motion: No additional management action necessary.	
9	develop advice on the magnitude and direction of action required.		
10			
11	3. Interpret the assessment results and put the conclusions	Motion: Accept average benchmark outputs from 2 models	
12	into a biological perspective that the public and managers		
13	can understand.		
14			
15	4. Based on the research recommendations, develop guidelines	Motion: Accept list of needs but recommend SSC review overall needs across	
16	to clarify and expand the recommendations to better inform	fisheries (priorities, costs, etc.)	
17	the Council on what needs to be done and what levels of		
18	resources and financial commitments might be necessary		
19	to satisfy these needs.		
20			
21	5. Review the SEDAR process and offer modifications/recommendation	will address after all 3 assessment review completed	
22	(e.g., standard terms of reference, contents of assessment documents,		
23	and necessary details from data workshop, etc.).		
24			
25	6. Clearly state what the appropriate SFA parameters are and what	Motion: Accept Table 2 from Appendix 3 for SFA parameters.	
26	the estimated values are.	Motion: Accept Definiton 2 for Foy	
27		SSC: The truncation of yellowtail age/size structure off Miami may be an	
28		indication of higher fishing mortality or variable recruitment and that the	
29		potential of greater F around human population centers be examined in future	
30		assessments	
31		SSC Motion: Accept the 7 points outlined above for yellowtail snapper.	
32		Approved by SSC	



**SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL**

**SCIENTIFIC AND STATISTICAL COMMITTEE**

**PAWLEYS ISLAND RESORT  
Pawleys Island, SC**

**October 25, 2004**

**SUMMARY MOTIONS**

1. MOTION: Accept the Snowy Grouper Assessment (intent best available data and adequate for management)

APPROVED BY BIOSUBCOMMITTEE

APPROVED BY SSC

2. MOTION: Assessment for Golden Tilefish is based on the best available data and adequate for management

APPROVED BY BIOSUBCOMMITTEE

APPROVED BY SSC

3. MOTION: Invite Gulf, Caribbean & MAFMC SSC Chair & Vice-Chair to attend any of our SSC meetings

APPROVED BY SSC

4. MOTION: assessment updates are to use the same modeling methods and include new annual data on catch, size/age and catch-per-unit effort indices previously utilized in the Assessment. Refinements to indices and technological advances in models that have been already approved in previous SEDAR Assessments, addition of new parameters, and scheduling of Assessment updates will be taken on a case-by-case basis.

MOTION: TABLE UNTIL AFTER LUNCH

MOTION TO TABLE APPROVED BY SSC

5. MOTION: There are two types of Stock Assessments being considered:

a. A major benchmark assessment where all data, methods, model structures, assumptions, etc. are on the table and under review.

b. An updated assessment which starts with a recent, major benchmark assessment, incorporating updated data with possible minor changes to data sources, model structure, assumptions, etc.

Assessment updates are to use the same modeling methods and include new annual data on catch, size/age and catch-per-unit effort indices previously utilized in the assessment.

Type 1 Assessments should be completed within the SEDAR process with full participation throughout and a formal peer review.

Type 2 Assessments should be completed through the update process which should incorporate representatives from relevant agencies and should be peer reviewed by the SSC.

All potential assessment updates should be approved by the SSC in principle before the major work begins, to ensure that the magnitude of the changes is appropriate for the update process. The SSC will determine if the magnitude of the changes is large enough to require assignment to the SEDAR Process.

APPROVED BY SSC

6. MOTION: Include S/E Representation at all 3 levels of SEDAR Workshops

APPROVED BY SSC

7. MOTION: Add Alternative 3. Only use stock status determinations developed through the SEDAR process or provided by NMFS, State Agencies, Universities and others (E.G., Contractors) and reviewed by the Council's Scientific and Statistical Committee.

APPROVED BY SSC

8. MOTION: Indicate Alternative 3 as the SSC preferred alternative

APPROVED BY SSC

9. MOTION: Accept alternative 2 which starts the fishing year March 1

APPROVED BY SSC

10. MOTION: Recommend the 5-year moratorium and during the moratorium Council complete evaluating alternative effort Limitation Programs that best fit the fishery

APPROVED BY THE SSC

11. SNOWY GROUPER - MOTION: accept wording for 67% reduction in exploitation rate.

APPROVED BY BIOSUBCOMMITTEE

APPROVED BY SSC

12. MOTION: Accept  $1-M*SSB_{msy}$  for Snowy Grouper (assessment folks to provide value of M)

APPROVED BY BIOSUBCOMMITTEE

APPROVED BY SSC

13. MOTION: Reduce exploitation rate by 35% for Tilefish to meet SFA requirements  
APPROVED BY SSC

14. TILEFISH - MOTION: Accept Fmsy and MSST as shown above (need to add estimate for M)  
APPROVED BY BIOSUBCOMMITTEE  
APPROVED BY SSC

15. MOTION: Accept  $M=0.07$  for Golden Tilefish  
APPROVED BY BIOSUBCOMMITTEE  
APPROVED BY SSC

**FINAL**  
**SCIENTIFIC & STATISTICAL COMMITTEE REPORT**  
**May 11-12, 2005**

The Scientific & Statistical Committee (SSC) approved the following:

1. Social and economic data and analyses should be incorporated into the SEDAR process. Economists, anthropologists and other social scientists should participate in the data workshop, identifying, compiling, and evaluating all relevant data sources. Following the data workshop, the socio-economic dimension should be developed in a process parallel to the SEDAR stock assessment process. See Socio-Economic Subcommittee Report, Item I.
2. The Black Sea Bass SEDAR Stock Assessment Update was certified as being based upon the best available data/science and adequate for management. See Biological Subcommittee Report, Item 1.3, numbers 1 through 14.
3. A table showing the fuel price index should be added to Snapper Grouper 13B. See Socio-Economic Subcommittee Report, Item I.
4. The SSC was surprised that the methodology used to identify species groupings in Snapper Grouper 13B were not included in the document and that no justification was provided. The SSC believes the species groupings should be reexamined to address the biological and socio-economic subcommittee concerns/recommendations. Both subcommittees identified analyses that could be used to develop defensible species groupings that would be more useful for management purposes than the existing groupings. These methods would take less than 2 months to complete if made a priority. See Socio-Economic Subcommittee Report, Item II. See Biological Subcommittee Report, Item 3.3, topic A.
5. The SSC approved the positions taken by the Biological Subcommittee on Snapper Grouper 13 (status determination criteria & years of data; methodology for estimating MSY and other SDC for data poor species; release mortality; management measures; best available data; biological impacts methodology; determinations about best available science for indicator species; catch reductions; and commercial quota. See Biological Subcommittee Report, Item 3.3, topics B through J.
6. The SSC approved the positions taken by the Biological Subcommittee on Snapper Grouper 13B specific topics. See Biological Subcommittee Report, Item 3.4, topics 2.2 (deepwater species), 2.3 (shallow water snapper) and 2.4 (mid-shelf snapper).

7. The SSC did not approve the socio-economic data and research needs list. The socio-economic subcommittee was not ready to finalize and approve their own list. They had developed the list through brainstorming, and wanted additional time to review, add, delete, edit, and prioritize the list. The list was presented to the full SSC only to facilitate input from the full committee. The socio-economic committee will finalize and approve the list at their next meeting, then send it to the full SSC.

8. The SSC approved the data and research needs identified by the Biological Subcommittee (See Biological Subcommittee Report, Item 6).

9. The SSC approved the following areas of concern identified by the socio-economic subcommittee in reviewing the black sea bass SEDAR assessment and projections (details included in socio-economic report) : (1) Recognizing that data are inadequate for such analysis, there is nevertheless a need to consider size distribution and abundance by size because of price differentials in the commercial fishery and potential benefits to anglers in the recreational fishery; (2) recognizing legal requirements, a desire to develop scenarios, which minimize adverse impacts on commercial fishermen, anglers, and local communities; (3) a more thorough ability to integrate the social and economic parameters over time into the underlying biological and economic assessments; (4) additional sensitivity analysis incorporating noise or potential environmental influences or shocks on the outcomes of the possible rebuilding schedules; (5) consideration of phased interventions in the regulatory strategies (i.e., incorporation of alternative regulatory strategies at various intervals of time); and (6) consideration of adjustment and transition costs in the development of regulatory strategies. A remaining, but very important, conclusion was that a substantial amount of research was necessary to better develop appropriate regulatory strategies.

The purpose of the research is to develop regulatory strategies to rebuild the resource, which explicitly incorporate the human dimension. The four major research areas identified were economic optimization and assessment over time; the potential temporal impacts on communities; the regional differences in community structure and impacts; and the need to consider extra-regulatory influences on communities.

10. The SSC endorses the trip level cost function and simulation approach to estimating the impacts of management alternatives proposed for the commercial fishery in Snapper Grouper Amendment 13b. The SSC also approved recommendations developed by the socio-economic subcommittee to improve the model; these recommendations are included in the socio-economic committee report.

**FINAL #2**

**BIOLOGICAL  
SUBCOMMITTEE REPORT  
May 10-12, 2005**

**1 Black Sea Bass SEDAR Stock Assessment Update**

**1.3 Questions/issues for the Biological Sub-Committee to address are as follows:**

1. Certify the assessment update, that is, is the assessment update based upon the best available data/science and is the assessment update adequate for management?

**The update assessment used the same assumptions, data and models that were certified by the SEDAR 2 independent review panel. The only additions were two years of data (landings and indices). Improvements recommended by the SEDAR 2 review panel and scoping panel on the treatment of some data were also incorporated.**

2. Based on the presented and reviewed assessment update, develop advice on the magnitude and direction of action required.

**Based on projections of current status, status quo is unacceptable, albeit sustainable.**

**All projections satisfy rebuilding in 10-year period. The most risk-averse rebuilding schedule would be the preferred option of the subcommittee. The precautionary (risk-averse) approach would be to reduce F as much as possible during the early phase of the rebuilding period to allow for a rapid rebuilding, and to limit the chance of recruitment failure to account for any uncertainty in recruitment.**

**Three additional projections are being prepared by the black sea bass stock assessment team, and a specific recommendation can only be made once these are available.**

3. Interpret the assessment update results and put the conclusions into a biological perspective that the public and managers can understand.

**Recommend the BSAC produce a consensus report for any updates of SEDAR baseline assessments.**

**An interpretation of the results of the black sea bass assessment update was provided by the chair of the assessment workshop.**

4. Was uncertainty of the science assessed adequately?

**Update was limited in addressing issues of uncertainty due to the limitations posed by updates (required to follow original assessment as closely as possible).**

**Uncertainty is always increased due to missing biological data – in this case the major area of concern was the lack of data on the population age structure. This will be partly addressed by aging all fish sampled by MARMAP, but needs to be addressed for fishery-dependent samples.**

**Model uncertainty was addressed by utilizing two models, which produced very similar results. The effects of changes to significant input parameters were tested using a series of sensitivity runs.**

**Predictions are bounded by confidence intervals; input parameters not varied in sensitivity runs have associated CV's.**

**Uncertainty in this model is attributable more to data limitations than model structure or application.**

5. Are the scientific conclusions reasonable with respect to:

- A. Age/length structure with respect to long-term, high F. See Table 21 (high Fs) and Table 10 (length distribution).
- B. Consistent commercial catch levels (Figure 2).
- C. How can there be full length and age structure present in the data (Table 10) and the biomass (Figures 30& 31) show severely overfished?

**Age structure shows a decreasing abundance of older fish as F increased over time (Table 24). Length frequency stays relatively stable because of variability in size at age. Model did fit length frequencies fairly well. Consistent commercial catches reflect the effect of size limits in allowing the population to stabilize around 25% SPR.**

6. Based on the research recommendations develop guidelines to clarify and expand the recommendations to better inform the Council on what needs to be done and what levels of resources and financial commitments might be necessary to satisfy these needs.

**A primary age validation study needs to be conducted as part of the development of a representative age structure for the population (Assessment report section 12.2 point 2).**

**Recommended research needs should include a subsection describing data that will result in an improved assessment (with lower uncertainty) such as a long-term fishery-dependent age data collection program.**

7. Review the SEDAR process and offer modifications/recommendations (e.g., standard terms of reference, contents of assessment documents, and necessary details from data workshop, etc.).

**The design for update assessment was thorough and the terms of reference were sufficient to produce a reliable product. A read-only excel file with all input data used should be included with the assessment report. The BASC should produce a consensus report for updates of SEDAR baseline assessments. The data workshop should provide an evaluation of the data produced during data workshop including better documentation of how data were derived.**

8. Were the Terms of Reference followed and all requested values provided? Note: The terms of reference are included as Appendix A in the updated stock assessment.

**Terms of reference were followed within the restrictions imposed by the requirements of an update, and time limitations. Landings (SSB in text only) were converted from metric tons to pounds.**

9. Should the catches be reduced by 50%(?) based on the assessment results?

**See question 2.**

10. Review your recommendations on F versus Exploitation from the initial black seabass assessment and comment on how the Council should use these data.

**Stay with full F, and use exploitation rate as an indicator/guide.**

11. The MARMAP pot data is used with a domed-shaped selectivity but a different selectivity is used for the commercial pot fishery. Is this appropriate? What would happen to the results if a domed-shaped selectivity was used for the commercial pot fishery?

**Initial assessment allowed for a dome-shaped or logistic selectivity curve; the model selected the logistic selectivity curve. It is uncertain what the actual effect would be if commercial selectivity were dome shaped. However, if a dome shaped selectivity curve were forced onto the commercial data, it is probable that F would increase to attempt to explain the truncation in age structure (selectivity curves are age based).**

12. The number of fish at larger lengths has increased over time (with high Fs) but Table 24 shows abundance at age declined. Is this consistent?

**See question 5.**

13. In Section 9.1.7 of the assessment update the following statement appears at the bottom of column 1 and carries over to the top of the next column: "The SSB-per-recruit curve approaches an asymptote of about 25%, which is due to the fish reaching maturity



before becoming susceptible to harvest. This asymptote helps explain why an increase of  $F$  over the last decade does not necessarily translate into a decrease of SSB.”

This highlights one of the confounding issues of the assessment results – why do the results show a decrease of SSB in the face of regulations protecting the fish until they mature? Also, if the above statement is true, then why do the results show the decrease of SSB?

**The 8” size limit did not reduce headboat and recreational landings, and only the smaller fish (albeit mature) were protected by regulations.**

14. Recruitment (Figure 28) – does the methodology adequately address changes in regulations and selectivity over time? Why would recruitment decline if fish are protected until they reach maturity?

**The methodology adequately addressed changes in selectivity over time (see question 1). Recruitment declines because SSB declines.**

## **2. Fishery Ecosystem Plan – cumulative impacts and fishing practices**

**The biological subcommittee did not have any comments at this time.**

## **3. Snapper Grouper Amendment 13B**

### **3.3 Issues -- General**

Guidance on picking preferred alternatives for the SFA parameters would be appreciated. Any additional guidance would be helpful. We are particularly requesting SSC input on the following:

- A. Species groupings – are these reasonable. The current groupings are based on biology, location and fishery. An important factor is that each group contain a species for which we have or expect to have a SEDAR assessment in the very near future. As additional stock assessments become available, species can move from one group to another. The Council is adding this to the framework provision for the Snapper Grouper FMP. Moving a non-indicator species from one group to another at this time would not change anything other than perhaps what regulations apply to that group. **Background information: Section 1.4; page 11/Alternatives for detailed analyses: Section 4.3; page 181/Rejected Alternatives: Appendix A.**

**Current species groupings are not supported by any comprehensive analyses, and therefore may not be defensible as best available science.**

**Due to data limitations, assessments can only be conducted on about 8-10 species in the Snapper Grouper FMU. These are the species that can serve as group indicators. However, these indicator species are the most productive and there is concern that management measure based on the status of the indicator species could result in overfishing of the less productive members of a species group. Species grouping based on data levels is not a reasonable approach.**

To make the proposed species groups defensible, quantitative analyses should be conducted. Three steps would be involved. First, analyses of commercial logbook, headboat, and MRFSS data would be done to identify species within each fishery that are caught together. Second, species caught together would be separated into groups based on similar life history strategies. Third, aspects of less productive members of groups would be examined to ensure that they would not be overfished using management measures that are based on the status of the indicator species.

**Analyses should be conducted by a SEDAR-type group.**

- B. Status Determination Criteria & Years of Data – which years of data should be used for which groups. This can have important implications for estimating MSY. **Background information: Section 1.4; page 11/Alternatives for detailed analyses: Section 4.4.1; page 185 (Shallow Water Grouper); Section 4.4.8; page 233 (Triggerfish/Spadefish); Section 4.4.9; page 237 (Jacks); Section 4.4.11; page 252 (Grunt/Porgy).**

**Estimating MSY for data poor species should be done as described in Section C.**

- C. Methodology for estimating MSY and other SDC for data poor species – is this an appropriate methodology? What about stock assessments that have been done in the past that while containing older data may be a more appropriate technique? **Background information: Section 1.4; page 11.**

**For data poor species that have not been recently assessed through the SEDAR process, Amendment 13B is using average catch modified by  $F_{curr}/F_{msy} * B_{curr}/B_{msy}$ . This approach has been recommended by Restrepo et al. (1998). However, Restrepo et al. (1998) indicate that the time series for catch should be as long as possible and that catch should be stable during that period. Furthermore, accurate catch data are needed and  $F_{curr}$  and  $B_{curr}$  should represent the time period of catch.**

**Although the quality of catch data has increased since 1994 (as indicated by SEDAR 4 and the BSB update), a long time series of catch is not available, catch has not been stable for the data poor species, and the Potts and Brennan (2001) trends report is a poor estimator of  $F_{curr}/F_{msy}$  and  $B_{curr}/B_{msy}$  as it based on a oversimplified analysis of the headboat survey (SEDAR utilizes a far more detailed analysis of the headboat survey), it doesn't represent all fisheries, and the data series does not include recent years.**

**A SEDAR-type process (in conjunction with the species grouping workshop) could be used to estimate MSY for data poor species. Average catch over some period of years may not be adequate to produce an accurate estimate of MSY due to data limitations. MSY should be calculated on a species-specific basis, taking into**

account all known aspects of the fishery for the species (regulatory changes, trends in the fishery over time, etc.).

- D. Release mortality – what rates should be used for which species?

**Appendix B: Biological Analyses of Management Measures.**

Analyses of management measures in 13B are using release mortality rates that were recommended by SEDAR assessments or were estimated based on information from tagging studies and are considered acceptable by the BASC. Additional release mortality rates for approximately 20 species have recently been estimated through a Cooperative Research Program grant and will be provided to the 13B team. If known, a species-specific release mortality should be used.

It was noted that release mortality of yellowedge grouper in the Gulf of Mexico was estimated at 100% but the release mortality rate considered for the deep water groupers in 13B was 95%. It is recommended that a release mortality rate of 100% be used in analyses of deep water groupers.

- E. Management measures – do the management measures seem feasible to achieve the percentage reductions required?

The BASC does not endorse the use of minimum size limits as a primary management tool except when release mortality is low. Time/area closures and trip limits are preferred. It is acknowledged that a minimum size would be needed in conjunction with a mesh size increase in black sea bass pots.

Trip limits, while having the potential to achieve the required reductions, have the potential to increase discard rates to the extent that the desired reduction is not achieved. The recommended measures of the BASC are effort reduction (including IFQs) and time/area closures.

Minimum size limits are not recommended for the hook and line fishery. However, minimum size limits might be more appropriate for use in the recreational hook and line fishery than the commercial hook and line fishery since recreational fishermen use gear in shallower water and bring fish to the surface more slowly than commercial fishermen. High grading would still be a concern in a recreational fishery that had only a bag limit.

- F. Best Available Data – is Amendment 13B based on the best available data/science?

For data poor species (also see Section C), Amendment 13B uses values cited in NMFS (1999) and Potts and Brennan (1998). The SSC recommends using more recent values of  $F_{curr}/F_{msy}$  from Potts and Brennan (2001). Furthermore, it is recommended that  $F_{40-50\%SPR}$  be used as a proxy for  $F_{msy}$  rather than  $F_{30\%SPR}$ .

**Fmsy from SEDAR assessments were: red porgy - F50%SPR; black sea bass – F46%SPR; snowy grouper F38%SPR; tilefish – F40%SPR; yellowtail snapper – F35%SPR.**

**Estimates for Fmsy will be obtained from SEFSC-Beaufort since they are not specified in Potts and Brennan (2001). For greater amberjack, values from the assessment conducted by Legault and Turner (1999) should be used.**

- G. Biological Impacts Methodology – is this an appropriate methodology?  
**Appendix B: Biological Analyses of Management Measures.**

**The methodology used was acceptable, but the assumptions were not. Analyses for management measures must account for (1) how non-compliance would change with different size and bag limits; (2) increased fishing effort on either side of a spawning season closure; (3) increase in recreational fishing pressure as the population of recreational fishermen increases; (4) B1 and B2 fish taken in the headboat fishery; (5) release mortality of fishes that are incidentally taken during closures or when a quota is met. These values cannot be easily estimated but a range of estimates should be considered since the value will not be 0. A range of estimates and protocol should be provided to the BASC via e-mail for their recommendations and approval. Better explanation needs to be provided on trip limit analyses in the documentation.**

- H. Determine with respect to best available science for each indicator species:  
(a) Assessment of the soundness of the scientific conclusions.  
(b) Assessment of uncertainty of the science.

**For species with a completed SEDAR assessment, the soundness and uncertainty of the science have been addressed. Time does not allow for a consideration of the remaining indicator species. Based on the recommendations in Section A, indicator species may change.**

- I. Should the catches be reduced by XX%(?) based on the assessment results for each of the indicator species? **Appendix B: Biological Analyses of Management Measures.**

**See Section A. The BASC has concerns that as the indicator species is likely the most productive species, management measures for that species may not be appropriate for other species in the group. Reductions specified for indicator species are appropriate and based on results from SEDAR assessments. Reductions for data poor species are based on the Fmsy/Fcurr ratio modified by the Baranov equation as recommended by the SEFSC Population Dynamics Team in June 2003.**

**A 102% increase in red porgy catch is appropriate since it is in accordance with the rebuilding schedule.**

J. How should the commercial quota be tracked? Should recreational fish that are sold be included? If not, how would you separate them?

**The BASC should not make recommendations on how the quota should be tracked. If recreationally caught fish are sold, they should be counted in the commercial quota, as there may be an issue with them being included in other databases (headboat or MRFSS). If recreationally caught fish continue to be sold, future management strategies could be impacted.**

### 3.4 Issues – Specific

#### 1. Highlighted Discussion issues

*NOTE – Page numbers below refer to the PDF version and are the page number reported on screen. They are 2 higher than the printed document page numbers.*

##### 1.1 Data and Methods for evaluating stock status

###### **Action:**

Review section for technical accuracy, approve methods. Attention on data poor stocks (those without quantitative assessments) and justifications for approaches, assumptions. Time periods of landings for estimating MSY.

Info: Summary S 1.4.2 P15.

##### 1.2 Management Actions Overview

FYI: Actions overview table.

Units	Alternatives					
	MSY	OY	MSST	Rebuilding schedule	Rebuilding strategy	Management measures
1A	√	√				√
1B	√	√		√		
1C	√	√		√		
2A	√	√	√	√	√	√
2B	√	√	√			√
3	√	√				
4	√	√				√
5	√	√				√
6	√	√				
7A	√	√			√	√
7B	√	√				√
8	√	√		√	√	√

### 1.3 Section 3. Affected enviro

This is summary info. Much is more fully documented elsewhere

**ACTION:** Review briefly, focus on biological information – accuracy, most recent.

### 1.4 Fishery Management Units

The FMP proposes allocating stocks into management units to address the many species for which there are no data available to evaluate status. Each unit contains an indicator species that will be evaluated to determine status. Species are grouped according to biological and fishery characteristics. Some units include subgroupings to address species with specific management needs.

**ACTION:** Review alternatives. Approve FMU groupings.

INFO:

Alternatives. S 4.3 P183

Table of preferred units S 4.3, P185.

Table 4.2-2. The division of the Snapper Grouper FMU created under Alternative 2. Indicator species are in bold. "Major species" are in non-italicized text and, together, constitute at least 95% of the landings in the unit based on catch data from 1999 through 2003. "Minor species" are in italicized text and, together, constitute 5% or less of the landings in the unit based on catch data from 1999 through 2003. The order of each unit listing reflects the relative contribution of each species to total unit landings from 1999 through 2003, beginning with the greatest contributors and ending with the smallest contributors. \*Species recommended for deletion. \*\*Species for which harvest and/or possession is prohibited. \*\*\*Species for which harvest is limited to one fish per vessel per trip and sale is prohibited.

**SHALLOW WATER  
GROUPE  
UNIT 1A**

**Gag**  
Red grouper  
Scamp  
Black grouper  
*Rock hind*  
*Red hind*  
*Graysby*  
*Yellowfin grouper*  
*Coney*  
*Yellowmouth grouper*  
*Tiger grouper*

**UNIT 1B**

Goliath grouper\*\*

**UNIT 1C**

Nassau grouper\*\*

**DEEP WATER  
GROUPE, TILEFISH &  
SNAPPER**

**UNIT 2A**

**Snowy grouper**  
Yellowedge grouper  
*Warsaw grouper\*\*\**  
*Speckled hind\*\*\**  
*Misty grouper*  
*Queen snapper*

**UNIT 2B**

**Tilefish (golden)**  
Blueline tilefish

**SHALLOW WATER  
SNAPPER, SAND  
TILEFISH, AND  
WRASSE UNIT 3**

**Yellowtail snapper**  
Gray (mangrove) snapper  
Mutton snapper  
Lane snapper  
Hogfish  
*Cubera snapper*  
*Sand tilefish*  
*Dog snapper*  
*Schoolmaster*  
*Puddingwife\**  
*Mahogany snapper*

**MID-SHELF SNAPPER  
UNIT 4**

**Vermilion snapper**  
Red snapper  
*Silk snapper*  
*Blackfin snapper*  
*Black snapper*

**TRIGGERFISH AND  
SPADEFISH UNIT 5**

**Gray triggerfish**  
Atlantic Spadefish  
*Ocean triggerfish*  
*Queen triggerfish\**

**JACK UNIT 6**

**Greater amberjack**  
Creville jack\*  
Blue runner  
Almaco jack  
*Banded rudderfish*  
*Bar jack*

*Lesser amberjack*  
*Yellow jack*

**GRUNT AND PORGY  
UNIT 7A**

**Red porgy**

**UNIT 7B**

Sheepshead  
**White grunt**  
Black margate  
Knobbed porgy  
Tomtate  
*Margate*  
*Jolthead porgy*  
*Scup*  
*Whitebone porgy*  
*Sailors choice*  
*Porkfish\**  
*Bluestriped grunt*  
*Saucereye porgy*  
*French grunt*  
*Cottonwick*  
*Spanish grunt*  
*Grass porgy*  
*Longspine porgy*  
*Smallmouth grunt*

**SEA BASS UNIT 8**

**Black sea bass**  
*Bank sea bass*  
*Rock sea bass*

**WRECKFISH UNIT 9  
Wreckfish**

## 1.5 Section 4 – Management Criteria

The boilerplate text for the management units states: MSY is the MSY estimate produced and recommended by the most recent SEDAR for the indicator species. If such an estimate is not available, MSY equals  $C/((F_{CURR}/F_{MSY})(B_{CURR}/B_{MSY}))$ . However, the SSC approved the following motion in October 2004: “7. MOTION: Add Alternative 3. Only use stock status determinations developed through the SEDAR process or provided by NMFS, State Agencies, Universities and others (E.G., Contractors) and reviewed by the Council’s Scientific and Statistical Committee.”

Thus, the SSC does not intend that SEDAR be the sole source of assessment information.

ACTION: Suggest alternative language so that non-SEDAR assessment information can be used in the future. Strawman language: “MSY is the MSY estimate approved by the SAFMC SSC”. Similar language should be used in other instances where SEDAR is specifically cited in this manner

## 2. Reference Points, Rebuilding

Proposed reference points and rebuilding strategies are in Section 4.4. (page 187).

### **GENERAL ACTIONS FOR ALL UNITS:**

Approve technical information. Scientifically sound? Most recent?

- Ensure technical accuracy, consistency with previous SSC actions (e.g., actions on SEDAR assessments), consistency with SSC endorsed assessments; approve any information not previously addressed by SSC (e.g., no record of SSC approving some of the cited documents).
- Information to review and approve includes SFA Status Criteria (MSY, OY), rebuilding information, Current stock status (Status Evaluation Table), Justification for chosen MSY time series,

Some previous SSC actions may need clarification – written documentation beyond minutes and summary motions. Some specific instances are noted under ‘ACTIONS’ for each unit, but there may be others.

The following section provides background for this action by summarizing available assessment information by management group. Any additional actions (beyond the general guidance above) is noted for each unit.

Quotations from 13b are in italics.

Relevant sections in FMP begin on page 187.

### 2.1 Unit 1. Shallow water grouper.

#### 2.1.1 Unit 1A

*Indicator Species:* Gag.

*Locator:* Page 187, Status Table P195. S4.4.1

*13B Status Ref:* NMFS 1999. (page 17 in 13B) Citation in 13B: National Marine Fisheries Service (NMFS). 1999. Control parameters and alternatives for



control rules for selected stocks under the jurisdiction of the South Atlantic Fishery Management Council. NMFS, Southeast Fisheries Science Center. September.

**Assessments:**

Manooch and Potts, 1998.

Trends, Catch Curve, VPA, YPR; use data through 1997. Include Monroe County Atlantic. Sampling adequate except MRFSS.

Trends 1998. Catch curve analysis of data through 1996.

Trends 2001. VPA analysis of data through 1999.

**ACTION:**

Does the SSC agree with the following statement: *However,  $F_{CURR}$  is adjusted from 2.0 to 0.18 in the index to recognize spawning season closures and minimum size limits implemented in 1999 through Amendment 9 to the Snapper Grouper FMP (Page 190)*

Are other items consistent with this (ie. F/Fmsy?)

Accept Trends Report Evaluation?

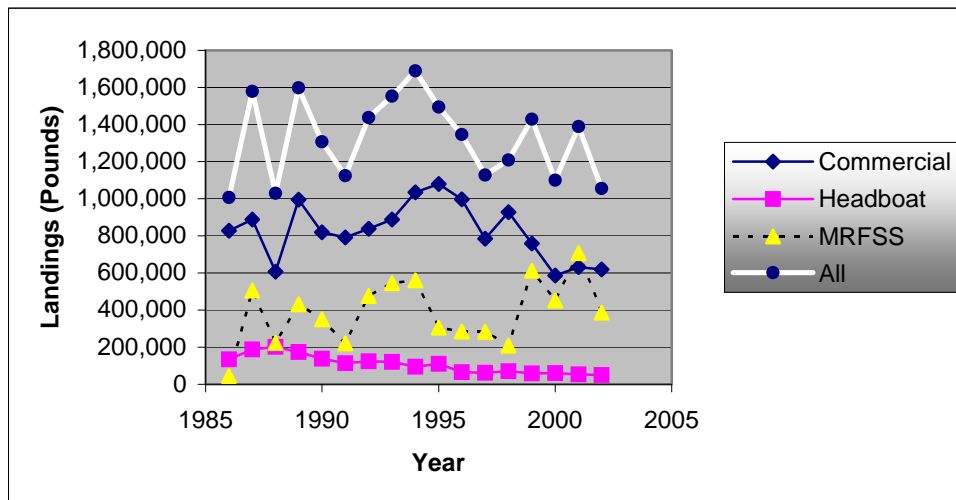


Figure 1. Gag landings by sector.

**2.1.2 Unit 1B. Goliath Grouper**

**Indicator:** Goliath Grouper

**Locator:** Page 201. S4.4.2

**13b Status Ref:** Same as Unit 1A

**Assessments:**

SEDAR 6. Survey based, S FL data only. Overfished, Overfishing unknown. Reviewed by SSC in May 2004. Results depend on assumed but unknown moratorium effectiveness. SSC called assessment inadequate, accepted stock status determinations but not status criteria estimates

**ACTION:**

Relevant SSC motions are on spreadsheet but not on summary document.  
Reiterate and clarify the intent of the motions, provide clear written statement.

Status determination (overfished) differs from Unit 1A.

Rebuilding schedules of 10 to 68 yrs cited as CFMC 2001. This citation is not included in the bibliography.

**2.1.3 Unit 1C Nassau Grouper**

*Indicator:* Nassau Grouper

*Locator:* Page 205. S4.4.3

*13b Status Ref:* Same as Gag.

*Assessments:* None found.

**ACTION:**

Status determination (overfished) differs from Unit 1A.

Rebuilding Schedules 10 – 53 years. Cite CFMC (not in bib. as noted above, and Porch and Scott 2001 – not in bibliography)

**2.2 Unit 2. Deepwater Snapper Grouper**

**2.2.1 2A. Snowy Grouper**

*Indicator:* Snowy Grouper

*Locator:* Page 215. S4.4.4

*13b Status Ref:* SEDAR 4 in intro, not cited with table in 4.4.4

*Assessments:*

SEDAR 4. Reviewed by SSC, October 2004. Accepted as adequate for management. Recommended alternative MSST ( $1-M*SSB_{msy}$ ).  
Recommended 67% reduction in exploitation.

**ACTION:**

SSC in October 2004 review requested median value for M, for use in determining MSST. Recommended approach, but need to provide final value.

Ensure 13B information is consistent with recent updated projections.

MSST listed in table X p216 is not consistent with October SSC motion.

Clarification of rebuilding time period: Rebuilding Schedules: p 217.

Reference Porch 2004 (not SEDAR 4). Ensure values listed are appropriate and consistent with previous SSC action. There is no clear SSC motion on recommended rebuilding times. SEDAR 4 results, generation time = 20yrs, Rebuild @  $F=0$  in 13 years, but may be different under latest projections.

Suggested 69% reduction fishing mortality. Does SSC endorse?

**The original recommendation for MSST equation for snowy grouper from the Science Center was to use 0.75Bmsy. At the 2004 Council meeting in South Carolina, the SSC made a motion from the Council to use the greater of (1-M) or 0.5Bmsy (from Restrepo et. al. 1998). The Council made a motion at the December 2004 meeting to use 0.75Bmsy, as the M is relatively low (0.12) and the uncertainty in stock status may result in shifts between overfished and non-overfished status that do not reflect true changes in the status of the stock.**

**The BASC agreed that the use of .75Bmsy is reasonable due to the concerns mentioned above.**

#### 2.2.2 2B Tilefish

*Indicator:* Tilefish (Golden)

*Locator:* p222. 4.4.5

*13b Status Ref:* P223. SEDAR 4 in intro, not cited with table in 4.4.5

*Assessments:* SEDAR 4. Reviewed by SSC in October 2004. Accepted as adequate for management. Alternative MSST recommended (same as for snowy grouper). M was available for tilefish (M=0.07)

**ACTION:**

MSST listed in table X p223 is not consistent with October SSC motion.

Chosen value does affect stock status determination.

Suggested 35% reduction fishing mortality. Does SSC endorse?

**The original recommendation for MSST equation for tilefish from the Science Center was to use 0.75Bmsy. At the 2004 Council meeting in South Carolina, the SSC made a motion from the Council to use the greater of (1-M) or 0.5Bmsy (from Restrepo et. al. 1998). The Council made a motion at the December 2004 meeting to use 0.75Bmsy, as the M is relatively low (0.08) and the uncertainty in stock status may result in shifts between overfished and non-overfished status that do not reflect true changes in the status of the stock.**

**The BASC agreed that the use of 0.75Bmsy is reasonable due to the concerns mentioned above.**

#### 2.3 Unit 3. Shallow water snapper, tilefish, wrasse

*Indicator:* Yellowtail Snapper.

*Locator:* Page 226. S4.4.6

*13b Status Ref:* SEDAR 3 in intro. Not cited Table X p228.

*Assessments:*

SEDAR 3. Reviewed by SSC in May 2004. Accepted by BASC as adequate for management. Recommended no further management actions. SFA criteria as in Table 2, appendix 3. OY alternative 2

***ACTION:***

No motion listed in SSC May 2004 indicating that the full SSC approved the BASC motions approving the assessment. BASC motions summarized on spreadsheet, not in document of summary motions.

Clarification of specific reference point values. Discussion by BASC and general agreement to take the average of the two presented and approved models (SEE BASC minutes May 2004 page 32-33.). No motion was made, so the recommendation is not clear.

Table 2, revised, SEDAR 3 Yellowtail snapper.

**The assessment workshop of the yellowtail snapper SEDAR used two models: the Fleet-Specific and Integrated Catch-At-Age. The review workshop of the yellowtail snapper did not endorse either model. In 2004, the BASC recommended using the average of the two models to develop biological reference points for Amendment 13B. However, this was not made into a formal motion.**

**The BASC recommends the use of the average of the two models to develop biological reference points for yellowtail snapper in Amendment 13B.**

Table 1. Stock status calculations for yellowtail snapper (italicized values indicate potential overfishing and overfished stock conditions)

Natural Mortality (M)	Steepness					
	----- h = 0.7 -----		----- h = 0.8 -----		----- h = 0.9 -----	
	$F_{2001}/F_{MFMT}$	$SSB_{2001}/B_{MSST}$	$F_{2001}/F_{MFMT}$	$SSB_{2001}/B_{MSST}$	$F_{2001}/F_{MFMT}$	$SSB_{2001}/B_{MSST}$
<i>Integrated Catch-at-Age (ICA) model</i>						
0.15	1.4	0.6	1.1	0.8	0.8	1.2
0.20	0.8	1.1	0.6 <sup>A</sup>	1.5 <sup>A</sup>	0.3	2.2
0.25	0.4	1.8	0.3	2.2	0.2	3.0
<i>Fleet-specific model</i>						
0.15	1.7	0.3	1.3	0.6	1.0	0.9
0.20	1.0	0.8	0.7 <sup>A</sup>	1.2 <sup>A</sup>	0.4	1.9
0.25	0.5	1.6	0.4	2.2	0.2	3.2

<sup>A</sup> Base-case model results

Table 2. Reference points, F and SSB levels for yellowtail snapper

Reference point or status measure <sup>a,b,c</sup>	ICA model	Fleet-specific model
$SSB_{2001}$	5,251 (11,577)	5,297 (11,678)
$SSB_{MSY}$	3,684 (8,122)	5,360 (11,817)
$SSB_{2001} / SSB_{MSY}$	1.43	0.99
$SSB_{MSST}$	2,947 (6,498)	4,288 (9,453)
$SSB_{2001} / SSB_{MSST}$	1.78	1.24
$F_{2001}$	0.19	0.24
$F_{MSY}$	0.33	0.33
$F_{OY}$ (definition 1) <sup>d</sup>	0.21	0.21
$F_{2001}/F_{OY}$ (definition 1)	0.92	1.13
$F_{OY}$ (definition 2) <sup>e</sup>	0.25	0.25
$F_{2001} / F_{OY}$ (definition 2)	0.77	0.95
$F_{OY}$ (definition 1) x $SSB_{2001}$ <sup>d,f</sup>	1,085 (2,392)	1,123 (2,477)
$F_{OY}$ (definition 2) x $SSB_{2001}$ <sup>e,f</sup>	1,299 (2,865)	1,330 (2,932)
MSY	946 (2,085)	1,388 (3,060)

## 2.4 Unit 4. Mid-Shelf Snapper

*Indicator:* Vermillion Snapper

*Locator:* p226. S 4.4.6

*13b Status Ref:* SEDAR 4 in Intro. Not cited Table p232

*Assessments:*

SEDAR 2. Reviewed by SSC in June 2003. Accepted as adequate for management. Biomass estimates considered unreliable by review panel. Recommended Fmax as proxy for Fmsy.

**ACTION:**

MSY alternative 2 based on SEDAR 4; SSC and review panel considered biomass estimates unreliable. Also affects estimated OY from SEDAR 4. Suggested 31% reduction in exploitation. Does SSC endorse?

**Both the vermilion snapper SEDAR Review Workshop and SSC (in June 2003) recommended that biomass-based estimates developed in the Assessment Workshop not be used for management purposes. However, the Council is legally required to designate a biomass-based MSY value for each managed stock. The 13B team is looking for direction as to how to compute the MSY.**

**A SEDAR-type process (in conjunction with the species grouping workshop) will be used to estimate MSY for vermilion snapper (see Section C).**

2.5 Unit 5. Triggerfish-Spadefish

*Indicator:* Gray Triggerfish.

*Locator:* p 235. S 4.4.7

*13b Status Ref:* Not indicated Table X p 236. Intro notes (p 15) NMFS 1999.

*Assessments:* Trends 1998, 2001.

**ACTION:**

Review SPR based Fmsy, Foy proxies from trends report.

Is status evaluation table consistent with the trends reports?

Suggested 7% reduction in exploitation. Does SSC endorse?

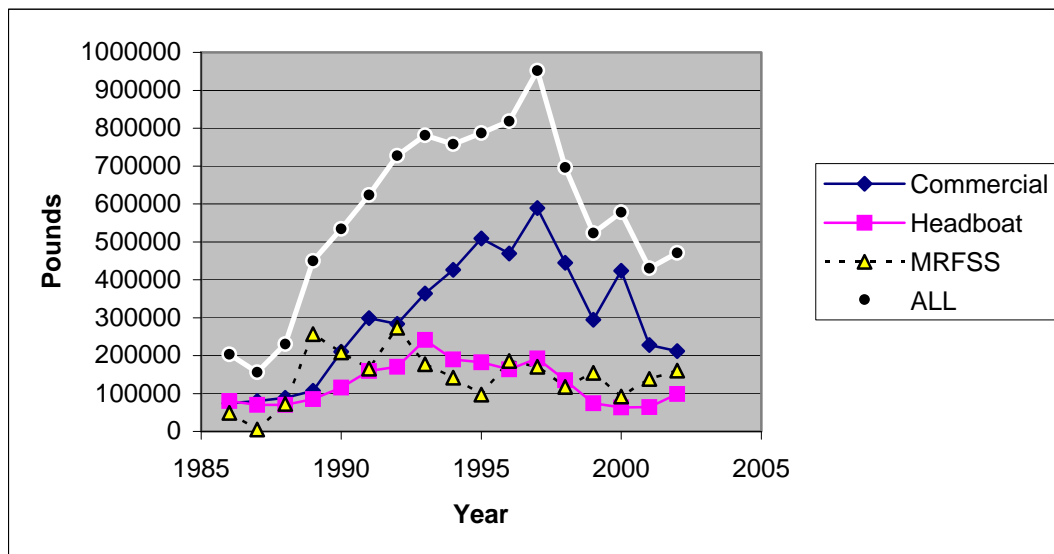


Figure 2. Commercial, headboat, and recreational landings for gray triggerfish (indicator species) in the Triggerfish and Spadefish Unit 5 from North Carolina to eastern Florida. Commercial landings are from the Accumulative Landings System, recreational landings are from the headboat data base and MRFSS.

## 2.6 Unit 6. Jack

*Indicator:* Greater Amberjack

*Locator:* P239. S 4.4.9

*13b Status Ref:* In intro, Legault and Turner 1999 (provided with additional documents)

### *Assessments:*

Trends reports, 1998 and 2001.

Legault and Turner. 1999. Stock assessment analyses on Atlantic greater amberjack. This was in the SG SAFE Report (1999?), and therefore presumably reviewed and approved by either the SSC or the SG ASC. The assessment considers several major uncertainties and presents a wide range of status information and benchmark values. No clear SSC/SGASC recommendation on a preferred run is yet uncovered.

### ***ACTION:***

## Landings & Size Trends

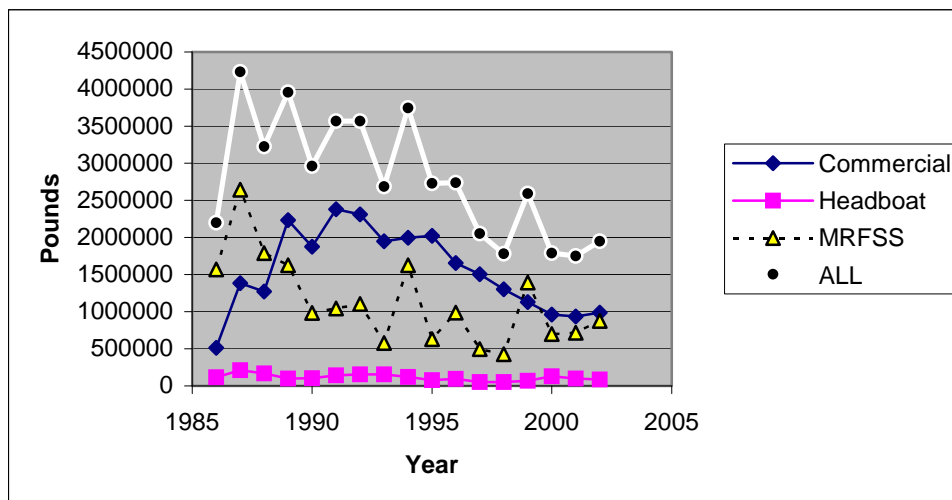


Figure 3. Commercial, headboat, and recreational landings for greater amberjack (indicator species) and unclassified jacks in the Jack Unit 6 from North Carolina to eastern Florida.

## 2.7 Unit 7. Mid-Shelf Snapper

### 2.7.1 7A Red Porgy

*Indicator:* Red Porgy.

*Locator:* P243, S4.4.10

*13b Status Ref:* SEDAR 1.

*Assessments:* SEDAR 1. Reviewed by SSC in 2003. Accepted as adequate for management. See BASC report.

**ACTION:**

Proposal is for increase in harvest by 102% in accordance with rebuilding schedule and preferred rebuilding strategy. Does SSC accept? Ensure this is consistent with previous rebuilding recommendations.

**2.7.2 7B. White grunt**

*Indicator:* White Grunt

*Locator:* P254. S 4.4.11

*13b Status Ref:* NMFS 1999.

*Assessments:*

Trends 1998, 2001.

**ACTION:**

F in the 1998 trends report is 1.08 of Fmsy (F30% SPR proxy = 0.26). The 2001 trends report lists SPR as 58% and F1999 as 0.23, below Fmsy proxy estimated in 1998, which indicates overfishing is not occurring. However, the 2001 trends report does not provide a point estimate of F30% SPR.

Suggested 6% reduction in exploitation. Does SSC endorse?

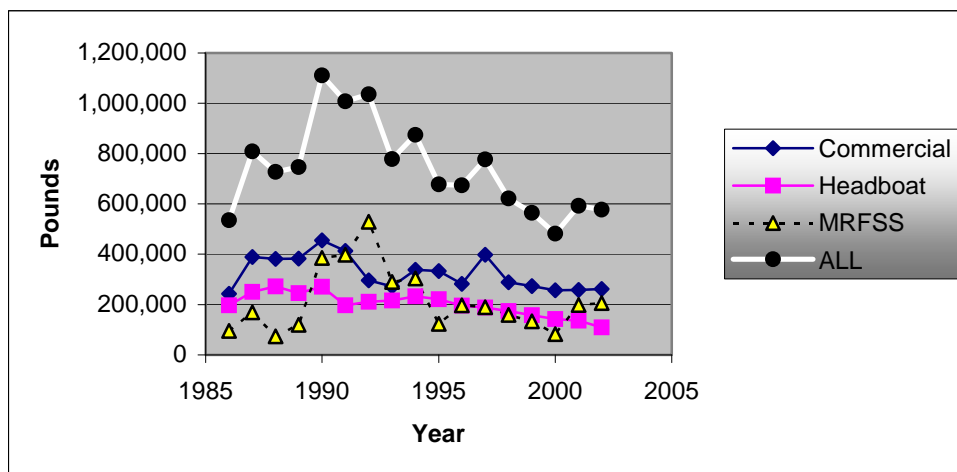


Figure 4. Commercial, headboat, and recreational landings for white grunt (indicator species) and unclassified grunts in the Grunt and Porgy Complex Unit 7B for North Carolina to eastern Florida. Commercial data are from the Accumulative Landings System. Recreational data are from the headboat survey and MRFSS.

**2.8 Unit 8. Sea bass**

*Indicator:* black sea bass

*Locator:* P258. S 4.4.12

*13b Status Ref:* SEDAR 2 (noted in intro).

*Assessments:*



SEDAR 2. Reviewed by SSC in 2003 (See written report). Accepted as adequate for management. Errors were discovered in Fall 2004 when updated projections were requested. The assessment updated in 2005.

**ACTION:**

Provide clear recommendations for information needed for 13B: required SFA criteria, rebuilding options, management recommendations (direction, magnitude).

2.9 Unit 9. Wreckfish

*No Action in 13B.*

**3.5 Protected Resources Issues**

Section 3.2.2.1, pages 66-74: Research Needs

1. Bycatch reporting – (self reporting could be expanded and independent reporting needed – are there research activities that may have records of protected species interaction?).
2. Outreach to fishermen on sea turtle, marine mammal and seabird species identification for more accurate, detailed reporting.
3. Other issues??

**4. SEDAR Process**

**STOCK STATUS DETERMINATIONS**

This is a very critical item. Under the Magnuson-Steven Act, NMFS is to provide the Councils with the necessary data and science including stock status. NMFS SEFSC has not provided stock status determinations for many of the species due to extreme data limitations. This has put the Council in the position of “voting” on stock status based on various spreadsheets developed by the NMFS SERO in cooperation with the NMFS SEFSC.

Recent reports examining our nation’s fishery management process (Ocean Commission and PEW) suggest separating science and management. Whether or not you agree with this suggestion, most would agree having the Council “vote” on stock status goes over the line of separation. Stock status is a scientific determination best done by NMFS SEFSC, SEDAR and our Scientific & Statistical Committee (SSC).

The current TEAM structured Snapper Grouper Amendment 13B document includes alternatives for choosing the years of data that determine MSY. What are the SSC’s recommendations?

**4.3 Issues**

- A. Any suggestions for refining/improving the process would be appreciated.
- B. What guidance can the SSC provide to clarify what an assessment update includes based on the black seabass update?
- C. The SSC has been selected to review the updated assessments -- any comments based on the black seabass experience?
- D. Use of pounds versus metric units in stock assessments. The Council has requested stock assessments be conducted in pounds because the data are collected in

these units, the public understands these units and converting to metric tons can lead to data errors. The following example looks at three individuals planning for retirement. The fisherman (Mr. Pounds) invests his money in dollars. The individual with a Master's Degree invests his money in thousands of dollars. The Ph.D. invests his money in the equivalent of metric ton dollars. The same amount is invested each year (\$9,499) and it is assumed that each year's growth is 10%.

	(metric \$)	(000 \$)	(\$)
Year	Dr. Metric	Mr. Rounding	Mr. Pounds
1	\$4	\$9	\$9,499
2	\$8	\$19	\$19,948
3	\$13	\$30	\$31,442
4	\$19	\$42	\$44,085
5	\$24	\$55	\$57,992
6	\$31	\$69	\$73,291
7	\$38	\$85	\$90,119
8	\$46	\$103	\$108,630
9	\$54	\$122	\$128,991
10	\$64	\$143	\$151,390
11	\$74	\$167	\$176,028
12	\$86	\$192	\$203,129
13	\$98	\$221	\$232,941
14	\$112	\$252	\$265,734
15	\$127	\$286	\$301,807
16	\$144	\$324	\$341,486
17	\$162	\$365	\$385,134
18	\$182	\$410	\$433,147
19	\$205	\$460	\$485,960
20	\$229	\$515	\$544,055
21	\$256	\$576	\$607,960
22	\$286	\$643	\$678,255
23	\$318	\$716	\$755,579
24	\$354	\$796	\$840,636
25	\$393	\$885	\$934,199
26	\$437	\$983	\$1,037,118
27	\$484	\$1,090	\$1,150,328
28	\$537	\$1,208	\$1,274,860
29	\$595	\$1,338	\$1,411,845
30	\$658	\$1,480	\$1,562,529
	<b>Total \$ at</b>		
	<b>Retirement</b>	<b>Difference</b>	<b>%Difference</b>
Dr. Metric	\$1,450,596		
Mr. Rounding	\$1,480,446	\$29,850	2.06%
Mr. Pounds	\$1,562,529	\$111,932	7.72%

Based on this example, the fisherman comes out ahead; what advice does the SSC have concerning conducting assessments and analyses using actual pounds for stocks in the SAFMC's area? Also, how does this compare with estimating F's to 2 or 3 decimal places?

## **6. Research Needs**

Comments on the need to prioritize these research needs, add to them, etc. would be appreciated.

### **THE FOLLOWING DATA AND RESEARCH NEEDS WERE DEVELOPED AND APPROVED BY THE BIOLOGICAL SUBCOMMITTEE.**

#### **Data needs (prioritized):**

- 1. Enhance (intensity and range) existing relevant fishery-independent surveys (high cost/high benefit).**
- 2. Establish long term and region-wide fishery-specific age sampling (medium/high).**
- 3. Periodic and region-wide fishery-specific discard (bycatch) data (high/high).**
- 4. Periodic and region-wide fishery-specific sex sampling (medium/medium).**
- 5. Location and depth information from all fishery participants (low/medium).**
- 6. Long term and region-wide fishery-specific length sampling (low/medium).**
- 7. Improve collection of landings data from all fisheries (medium/medium).**
- 8. Develop and evaluate juvenile and/or larval surveys as additional indices (low-high/low-high).**

#### **Research needs:**

- 1. Age validation (periodicity and agreement between labs) (medium/high).**
- 2. Evaluate models used in assessments and projections (low/high).**
- 3. Develop simulations to test model uncertainty using known input data (low/high).**
- 4. Quantify all sources of human-induced mortality (discard mortality, unreported catch, etc.) (high/high).**
- 5. Evaluate stock separation (mixing rates, genetic variability, immigration/emigration,...) (high/high).**
- 6. Determine historical abundances of species from all sources available (medium/medium).**
- 7. Evaluate potential contributions of all fishery-independent surveys and the development of alternate surveys (medium/medium).**
- 8. Evaluate different gears/technologies to reduce release mortality (high/medium).**
- 9. Evaluate the potential use of commercial logbook data as an abundance index in stock assessments (low/medium).**
- 10. Evaluate the potential use of MRFSS data as an abundance index in stock assessments (low/medium).**
- 11. Evaluate the sample size required to reliably estimate all life history parameters for each species (low/medium).**
- 12. Evaluate effects of protogyny on stock assessments (low/medium).**
- 13. Environmental effects (high/medium).**
- 14. Develop bioenergetic, trophic, and other ecological relationships between and within species of the region (medium/low).**

- 15. Develop a standardized database to house all landings data and biological data (low/low).**
- 16. Evaluate the effectiveness of moratoria in limiting harvest (low/low).**
- 17. Species-specific fecundity (low/low).**

**7. Council/NMFS National Meeting**

The SSC should provide feedback and specific guidance/concerns for any items as they see fit.

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The following figures were presented during the biological subcommittee meeting:

### Variability of Black Sea Bass Growth (Trap Data 1987-1998)

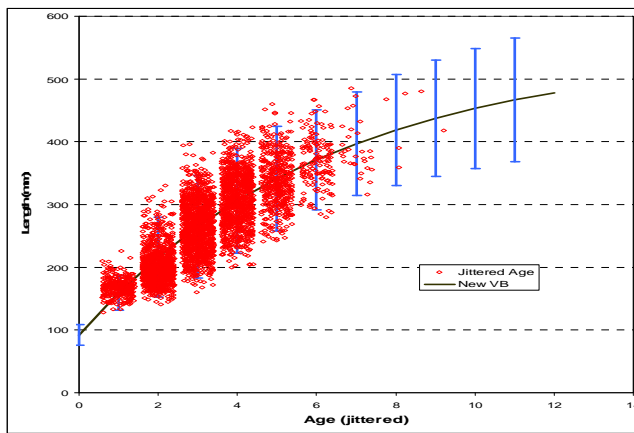
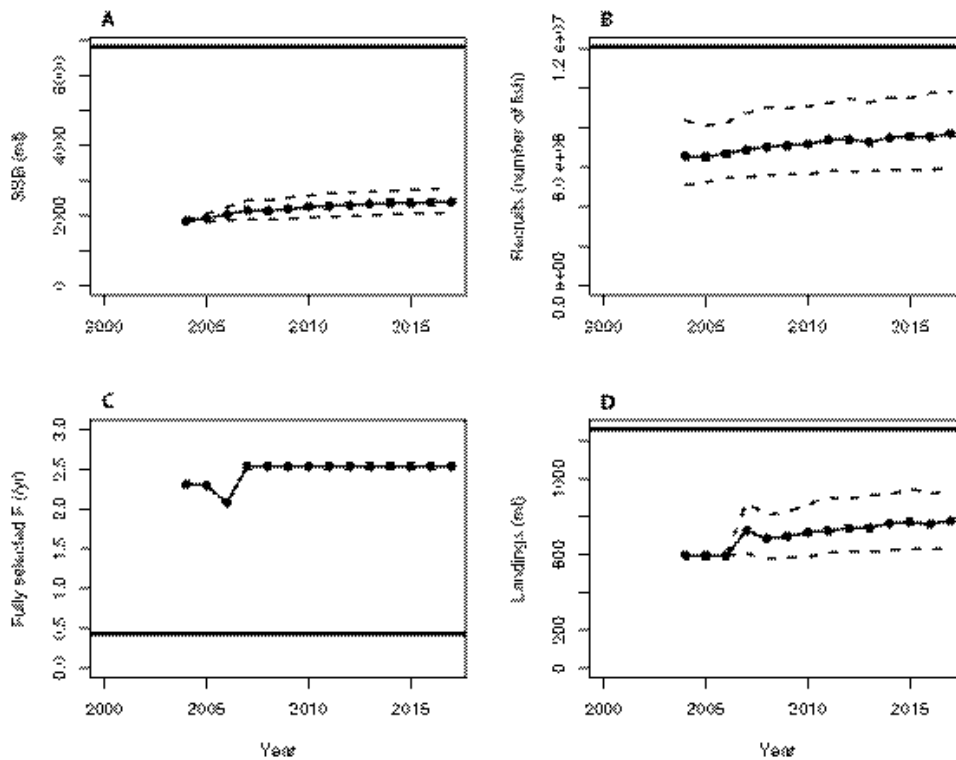


Figure 1. Projections with  $F$  and  $F_{\text{Now}}$ , the estimated current fishing mortality rate. Based on 1000 bootstrap replicates, the solid lines with circles represent median values, and the dashed lines represent 20th and 80th percentiles. A) SSB horizontal line is  $SSB_{\text{MSY}}$ ; B) Recruits, horizontal line is  $R_{\text{MSY}}$ ; C) Fishing mortality rate, horizontal line is  $F_{\text{MSY}}$ ; and D) Landings, horizontal line is  $MSY$ .



# **South Atlantic Fishery Management Council**

## **Scientific and Statistical Committee Report\***

**Report of June 12-14, 2006 Meeting**

*July 6, 2006*

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\* All SSC members were given the opportunity to review and edit the individual sections of this document. After the resulting edits were incorporated, all SSC members were again given the opportunity to review and edit the final draft. This resulting document represents the consensus of the SSC.

## **Amendment 14**

Amendment No. 14 to the Snapper/Grouper FMP proposes the designation of eight Marine Protected Areas (MPAs) and a vessel monitoring system (VMS) to facilitate enforcement. Alternatives include various sites (areas) and allowable take and no take activities.

Amendment 14 is unlike Amendments 13c and 15 in that it is not designed to specifically end overfishing or an overfished status. It is designed to create a series of MPAs in the jurisdiction of the South Atlantic Fisheries Management Council. This amendment is consistent with the goals and objectives of the SAFMC Habitat Plan and the activities and objectives of the SAFMC Ecosystem Based Management Committee. The goals are identified in the document itself.

The SAFMC has stated that MPAs will not be used as a primary management measure, but will instead augment traditional fishery management measures. MPAs have been shown to successfully accomplish a number of management goals under the right conditions. For Amendment 14 to be successfully presented, the document must be expanded to include the following two components: 1) An argument that the MPAs proposed could successfully accomplish the desired management goals based on a synthesis of existing literature, data, and analyses, and 2) Measurable outcomes that can be tested through rigorous experimental design, research, and monitoring.

In its current form, Amendment 14 does neither. As such, a strong justification for Amendment 14 does not exist. The current text also states that significant biological benefits are expected to occur as a result of the Amendment. However, no literature is presented to support this expectation.

The literature exists to support benefits resulting from MPA creation, but the review in the current version of Amendment 14 is cursory. Many of the key, fundamental references in the field are not cited including the NRC report on MPAs, the government website ([www.mpa.gov](http://www.mpa.gov)), or the primary literature on enforcement by Davis and Moretti (2005). In addition, there are many possibilities for reviewing data and analyses from other MPAs in the SAFMC area of jurisdiction such as Grays Reef Marine Sanctuary and the Oculina Banks HAPC. Relevant information is also available in the Gulf of Mexico and the Florida Keys. We think the justification and background section should be more comprehensive and detailed.

The SSC reviewed and examined the proposed actions and associated social and economic impact assessments. It was concluded that the socioeconomic data used in the analysis were the best available. However, it was also concluded that the qualitative assessment was subject to a high degree of uncertainty relative to the direction and potential magnitude of the impacts. Semi-quantitative analysis that better characterizes the degree of impact would be useful to the assessment of the proposed MPA alternatives. The SSC recommends that a spreadsheet or tabular summary of appropriate social and economic variables and



corresponding indicators of the likely direction and magnitude of the impacts should be developed.

The SSC recognized a need for enhanced spatial data resolution to support more precise analysis. The SSC suggests refining future data collection to provide geographic resolution sufficient to distinguish fishing effort and catch occurring inside and outside MPAs.

The proposed VMS for monitoring and enforcing activity in the proposed MPAs was also examined and reviewed. The SSC recognizes that VMS systems are important for establishing the credibility of MPA enforcement. The recommendation to adopt VMS was based on the best available data and science.

Ideally, the SSC believes that Amendment 14's MPA creation requires research and monitoring, pre- and post-implementation, using appropriate, interdisciplinary (i.e. biological and socioeconomic), experimental design. The research needs and evaluation program presented in section 4.11 is insufficient to evaluate the effectiveness of Amendment 14. No research and monitoring plan is presented. Limited baseline data exists on the specific sites proposed which would be needed to conduct a before and after implementation comparison. Studies in control sites or sites adjacent to the proposed MPAs have not been designed or implemented. The SSC realizes that the ability to begin any future monitoring and research is subject to available resources. The SSC urges that research and monitoring design and implementation begin as soon as possible, as the longer the delay, the less likely it will be to evaluate management effectiveness.

## **Amendment 15**

The SSC cannot endorse Amendment 15 as the best available science because critical methodologies and analyses required to make the determination of best available science are missing from the current version of the document.

Amendment 15 contains little to no information on the social and economic choices and consequences. Sections devoted to economic, social, and administrative effects have been left blank. The regulatory effects of Amendment 15 are at best ambiguous and implementation of Amendment 13C will change the benchmark values and rebuilding schedules.

The SSC believes that the document language regarding regulatory effects of Amendment 15 is at best vague. Strictly interpreted, the language suggests no regulatory impacts will occur from changes to management reference points. For example, on p. 45, the section 2.2.1.1 management reference point alternative states "There are no direct effects from redefining and/or updating MSY, OY, and MSST because these parameters simply provide fishery managers with targets and thresholds that will be used to assess the status and performance of the fishery . . . ." However, redefined management reference points will likely require regulatory changes to meet the new reference points. Any regulatory changes will have social, economic, and administrative impacts. The document simply states conclusions without providing a summary of the methodology used to evaluate the alternatives or support the

preferred alternative. For example, with regard to red porgy, section 4.4.1.2 concludes that the preferred alternative will produce “substantially increased harvests upon resource recovery” and, thus, will produce “increased economic benefits.” However, SSC review is precluded from evaluating results because there is no description of the methodology used to derive the “increased economic benefits” conclusion. (E.g., which “benefits” are included? What discount rate is being used? What time horizon is assumed, etc.) Ironically, the impact conclusions presented in section 4.4.1.2 pertain to proposed changes in management reference points, which are described elsewhere in the document as having no economic impacts.

Implementing Amendment 13c will change the values of the species benchmarks. The projection analyses contained in Amendment 15 used the benchmark values from the stock assessments and did not include the impacts from Amendment 13c. The projections did not include all of the sources of mortality, such as post quota bycatch mortality, nor the effects of minimum size changes to vermilion snapper and black sea bass. The rebuilding strategies in Amendment 15 for snowy grouper, black sea bass, and red porgy stocks were based on projection analyses resulting from the respective stock assessments and the proposed quotas for tilefish and vermilion snapper were based on projections and benchmark calculations. The projections assumed that (1) the selectivity patterns for the fisheries, (2) the relative proportion of the total catch for each fishery, and (3) the amount of discards, will remain unchanged into the future. Any changes in these features of the fisheries must be minimal for the projections to be valid. Significant changes to any one of these factors may prevent the stock from reaching the recovery point in the specified rebuilding time frame. The values of the benchmarks are also potentially affected by changes in selectivity patterns and fishery re-allocations.

The SSC recommends the projections be re-analyzed to include significant changes resulting from the implementation of Amendment 13C, when appropriate. Furthermore, the SSC recommends that additional revised rebuilding strategies include scenarios that are less risky (e.g.  $F < F_{MSY}$ ).

There is no methodology describing the economic models used and there are no economic models presented in the document. Subsequent social and economic impacts cannot be determined until modeling is complete. The economic model and its results should be reviewed by the SSC. The SSC believes that the amendment should not proceed to public hearing until the social and economic data are included.

More specific items pertaining to Amendment 15 were addressed by the SSC according to the roadmap:

Item C. The SSC recommends that Amendment 15 be referred to the Law Enforcement AP for evaluation and comment and their comments should be included in the document.

Item D. The amendment does not contain adequate information for setting ABC ranges because of the regulatory changes in Amendment 13C and the omission of other sources of removals such as post quota bycatch mortality. The SSC also thinks that considering more risk averse rebuilding strategies would require revised rebuilding projections.

Item H. Amendment 15 sections 2.1.9 and 2.1.10 describe alternatives pertaining to permit renewals and transferability. These sections, however, do not provide discussion regarding the reasoning and justification for the alternatives that identify possible benefits and costs that can be used for subsequent socioeconomic analysis.

Item I. The SSC recommends that recreational and commercial overages be applied to that sector's allocation the following year (including a small correction factor) as described in the commercial sector of Alternative 4a in order to keep the stock on its rebuilding trajectory.

Item J. The SSC prefers methods that slow-down fishing as the quota is approached.

Item K. With respect to queen (*Etelis oculatus*) and silk snapper (*Lutjanus vivanus*), the SSC concurs with eliminating minimum size limits as long as their elimination does not encourage increased targeting or harvesting.

Item L. Because the recreational landings and all discards are recorded in numbers and since the average weights from the commercial sector are better known, the SSC recommends allocation computations be based on numbers of fish from the stock assessment for the commercial and recreational sectors because they represent the best estimates of landings by sector.

The following two issues were not included in the roadmap:

The SSC recommends changing the text window on page 11 of Amendment 15 for MSST be changed to "MSST. The biomass level below which a stock is considered overfished." The SSC did not recommend an MSST alternative because of the changed benchmark values and additional analyses will be necessary to choose among the MSST alternatives listed in Amendment 15.

The sale of recreationally caught snapper grouper fish (section 4.8.2) addresses an issue that compromises commercial socioeconomic data from some states and increases administrative costs. Requiring a commercial snapper-grouper permit for sale of fish from the snapper-grouper complex when landed from head boats, charter boats, or the private recreational sector, will increase the quality of biological and commercial socioeconomic analyses, and enhance law enforcement effectiveness.

## **Cooperative Research/MARMAP Sampling**

- A. Do these results support the previously expressed concern that MARMAP sampling underestimates the size of fish in the population and are therefore not representative of the population?

The length frequency diagram, Figure 16 in the CRP report, compares sizes of red porgy, vermilion snapper, scamp, black sea bass, and gray triggerfish from a cooperative commercial fisher to sizes of

those same species captured in MARMAP chevron traps in 2004. The lengths of these species sampled by hook and line in the CRP study are larger than the lengths captured in the chevron traps leading to the above question: Do chevron traps underestimate the size of fish in the population?

The results from the hook and line study *do not* support an argument that MARMAP sampling underestimates the size of fish in the population. The argument could equally be made that hook and line data overestimate the size of fish in the population. All fishing gears, including MARMAP chevron traps and the hook and line gear used by the cooperating fisher are size-selective. In recent assessments (e.g. vermillion snapper, red porgy), the selectivities of hook and line gear and chevron traps are presented. The selectivity of chevron traps are dome shaped while hook and line gear have a knife edged selectivity showing 100% selectivity on fish that are of legal size. Thus, the differences in length frequencies observed in Figure 16 are what would be predicted based on each gear's selectivity patterns. There is no known data set that provides size estimates of any wild reef fish population off the southeastern US, therefore it is impossible to say the MARMAP data underestimates the size of fish in the population.

B. Are there other explanations for why a commercial fisherman fishing in the same area would catch larger fish than the MARMAP sampling gear in the same area/time?

1. Commercial hook and line fishing is size selective, particularly for species with size limits in place, and may over-represent the abundance of larger fish in the population. This is a classic example of gear selectivity. This can be seen by comparing selectivity curves between hook and line gear and chevron traps in recent assessments (e.g. vermillion snapper, red porgy).
2. Commercial fishermen are mobile – if they are fishing in an area where the bulk of their catch is sub-legal, they may move to an area where they can catch larger fish. MARMAP is sampling known reef fish habitat – without targeting any species, size range, etc. MARMAP sampling is analogous to quadrat sampling in terrestrial ecology – samples are randomly collected from known habitat regardless of the distribution of a species within that area at the time of sampling.
3. The commercial sampling in the present study occurred from June through November (although planned for April through September, unanticipated problems beyond the control of the study organizers caused delays in commercial sampling), while the MARMAP sampling period is May to September. Furthermore, all commercial fishing was conducted off South Carolina, whereas MARMAP sampling was conducted from Cape Lookout, NC to Fort Pierce FL. As a result, the commercial size distributions presented in this study are not strictly comparable with the MARMAP size distributions on a “same area / same time” basis. That is, part of the difference in the size distributions may be attributable to differences in sampling periods.

C. Does this have any implications for stock assessments that have already been completed? For future assessments?

The differences in sizes of fish observed between hook and line gear and chevron traps has no negative implications for stock assessments of the snapper-grouper complex.

1. Gear selectivity does not invalidate the use of chevron trap catches as an abundance index. Relative abundance indices from fishery-independent surveys, such as MARMAP, are important to show trends in abundance through time.
2. Selectivity is (usually) addressed within the model (for example, chevron trap selectivity is modeled using a double logistic curve, and is typically dome-shaped), and is therefore not an issue in current or future assessments.
3. MARMAP sampling has an additional positive benefit on stock assessments by providing small specimens not seen in fishery-dependent samples. These small specimens are vital for age and growth and reproductive studies. For example, immature specimens are typically the smaller individuals within a population; chevron traps provide an adequate sample size of immature specimens from which to derive a maturity ogive for any given species.

## **Mackerel Stock Identification**

The SSC agrees with the findings of the joint ad-hoc subcommittee regarding mackerel stock identification.

The SSC would like to stress the need for additional stock identification research. The otolith microchemistry technique is an appropriate and useful method to further resolve this issue. Currently, microchemistry data are extremely limited, both temporally and geographically (only 2 winters in South Florida). Sampling must be expanded both temporally and geographically.

Based on currently available data, the SSC supports the ad-hoc subcommittee's conclusion that between 20% and 80% of the winter mixing zone landings likely are contributed by the Atlantic migratory group. No single point estimate for mixing rate can be justified from the limited existing analyses for partitioning past catches or projecting catches into the future due to uncertainty. Stochastic simulations which incorporate the uncertainty can be used to partition past catches as well as future projections. This will provide a distribution of outcomes. None of the studies justify the continued acceptance of the status quo (100% Gulf migratory group in the mixing zone).

The SSC restates that the next assessment should not be an update because many issues (e.g. age, growth, and fecundity) were not adequately addressed in SEDAR 5 and still require the major review associated with a benchmark assessment. Also, changes in management strategies will require socioeconomic analyses of potential impacts.

In addition, the Council asked the SSC three questions during our meeting to which we respond below:

1. Is it the opinion of our SSC that the Terms of Reference provided to the joint ad-hoc committee were answered? Yes, to the fullest extent possible given the best available data and science.
2. Is it the opinion of our SSC that the best available data was in fact used by the joint ad-hoc committee in forming their joint recommendations? Yes, to the best of our knowledge.
3. Is it the opinion of our SSC that the answers to expressed questions in the Terms of Reference benefit the sustainability of the King Mackerel stock? Yes. The stock identification issue relates to partitioning landings, which is an important ingredient in the stock assessment process. The answers to the Terms of Reference move us forward in terms of both identifying research needs and improving landings estimates.

## **Data Collection Issue**

How to collect data to conduct assessment updates for species like snowy grouper? (low trip limits, no directed trips so all catches are incidental to targeting other species, etc.)

The role of the Scientific and Statistical Committee (SSC) is to evaluate whether the methods used for analysis are the best available science. While the SSC is not responsible for designing analytical tools or sampling programs, the council has asked for SSC input.

The deep-water snapper-grouper complex in the South Atlantic includes species that are caught infrequently which complicates ancillary data collection such as sizes and hard parts. The SEDAR 4 Data Workshop reviewed the available data for misty grouper *Epinephelus mystacinus* and queen snapper *Etelis oculatus*, and found an absence of life history information on maximum age, growth, and reproduction. These two species had combined annual landings of less than 10 mt per year from the entire South Atlantic region. How can we determine the status of these and other species that have a paucity of information?

Other councils have to deal with the same question. NMFS conducted a Workshop on Assessments for Data Poor Species in 2001 in Seattle, and Alaska Sea Grant's Wakefield Symposium in 2003 in Anchorage likewise addressed data poor situations. Lacking data, analysts have used a variety of methods based on surplus production models, catch trends, catch and effort, and arguing from analogies to data-rich species with similar life histories from the literature. These methods are very similar to that developed by the Southeast Fisheries Science Center developed for the SAMFC in 1998 utilizing species groupings with an indicator species. At their October 2005 meeting, the SSC concluded that using species groups with indicator species is not risk averse as it could permit overfishing and some species could become overfished if there is a mismatch in life history parameters. The simple answer is that real, not synthetic, data are required to make inferences with reasonable levels of certainty.

So what can be done? First, we can evaluate the extent of the problem with these other species by using logbook data to examine the frequency of catch, magnitude of catch, number

used for bait, number discarded dead, number discarded alive, and the fate of fish discarded live. Based on the review of the discard information from logbooks, a decision could be made to expand the discard coverage in the logbooks. Logbook data would provide catch per effort trends. If otoliths could be obtained, then catch curves could give rough ideas of total mortality rates. On trips with observers, some length measurements and hard parts could be obtained whether the fish were landed or not. An alternative would be to request CRP funds to work collaboratively with fishers who consistently catch large numbers of these species to get these data. Although MARMAP does not get many of these deep-water species, perhaps some age information could be obtained from the few fish that they encounter.

This situation highlights the need for fishery independent surveys which collect information that the fishery cannot.

## **Red Porgy SEDAR Assessment Update**

Item A. Defer to discussion of Item D (see Terms of Reference).

Item B. We would have to generate the landings and discards as below in Item C and rerun the base run to evaluate whether these landings can affect the stock determination.

Item C. Because the jurisdiction of the councils runs along Highway 1 in the Florida Keys, the data collection programs to estimate landings have area fished codes that can be used to distinguish whether landings in the Florida Keys came from the Atlantic waters or the Gulf/Florida Bay waters. The Headboat Survey (HS) uses area codes 1-17 for Atlantic waters and 18+ for Gulf waters so the codes in the Keys are 12 and 17 for the Atlantic side and 18 for the Gulf side. The Marine Recreational Fisheries Statistics Survey (MRFSS) intercepts use collapsed area codes (area\_x) 1 and 2 to indicate the Atlantic side and 3 and 4 for the Gulf side and FIPS code 87 for Monroe County. Florida's commercial trip ticket system uses Area Fished codes: 1.0 1.9, 2.9, 748.0, and 748.9 for the Atlantic side of the Keys and 1.8, 2.8 for the Gulf side. Area 2.0 is a complication because it just indicates that they were fishing in Federal waters off the Tortugas.

What is needed are estimates of the removals and discards from those areas. The Headboat Survey estimates their landings by area so that they just have to tally the Atlantic landings by the Keys and those north of the Keys. Similarly, Florida's trip ticket program can tally the landings and trips by area. The only problem is with (MRFSS) because one has to run NMFS's post-stratification program to generate harvest and release estimates for the Atlantic and Gulf portions of the Keys. There are also very serious reservations about the quality of MRFSS data overall, based on a recent NRC study.

Item D. Consensus Review Report (Below)

Item E. Advisory Report (Below)

## SSC Consensus Summary for the Red Porgy Update Assessment

June 2006

### Meeting Overview

The SAFMC SSC met 12-14 June 2006 at the Wyndham Grant Bay Hotel in Coconut Grove, FL to, in part, discuss and review the update assessment for red porgy. Following the presentation by Dr. Kyle Shertzer, the SSC discussed the source, use, and scaling of the coefficients of variation (CVs) on the catch data and indices of abundance used in the stock assessment. The CVs for the MRFSS data are based directly on the sampling design of MRFSS. There are no CVs generated from the data for the commercial landings because it is assumed that commercial landings are derived from a census rather than a sample. Similarly, there are no CVs based directly on the data for the index of abundance from the commercial headboat data. MARMAP indices of abundance have CVs based directly on the data. For each of these inputs, CVs are either applied (when not available from the data) or scaled so that the stock assessment team can directly weigh the relative importance of each input series. This rescaling does not impact the year to year. The choice of weights was based on an iterative process so that the model's estimate reasonably fit the input data and biological realities.

The improvements made in this updated assessment were substantial and the assessment team should be highly commended.

### Terms of Reference

1. Update the SEDAR 1 assessment of South Atlantic red porgy with data through 2004.  
*The MARMAP chevron index and landings data from the recreational sector, headboat fishery and combined commercial fisheries were included and incorporated data through 2004.*
2. Document changes or corrections in input datasets and any additional data added for the update. Consider sources of discard information that may now be available.  
*In the benchmark assessment the headboat index covered the years 1976-1998, broken into 2 indices whereas the update uses data from 1973-2004 as a single index with changing catchability. Explicit estimates of discards were used for 2001-2004. Another difference from the benchmark for commercial landings was the incorporation of a linear shift in C.V. (coefficient of variation), signifying the increase in precision for the more current data. The discrepancy in length at age estimates between NMFS-Beaufort and SCDNR/MARMAP was addressed. What was once thought to be a difference between labs turned out to be a difference between using sectioned or whole otoliths. To address this issue, all length at age estimates were based on sectioned otoliths or adjusted values for whole otoliths. Age compositions from commercial handline gear for 1997–1998 and 2000–2001, and age compositions*



*from the recreational fishery for 1987 (the only year with sample size greater than the minimum cutoff of  $n=50$ ) were updated from those used in the benchmark assessment.*

3. Document any changes in assessment methodology incorporated in the update as well as changes made to correct any errors identified in the SEDAR 1 benchmark assessment.

*As with the benchmark assessment, the update used a forward projecting statistical catch-at-age model. In the update assessment, the method of benchmark estimation was modified slightly to include a bias correction in equilibrium recruitment that was unaccounted for in the benchmark assessment.*

4. Incorporate the model changes accepted for SEDAR 4: annual CV's for catch datasets, trend in catchability for the headboat index.

*A linear shift in C.V. for the commercial landings was included, and the headboat index was treated as a single index with shifting selectivities.*

5. Estimate and provide complete tables of stock parameters, including but not necessarily limited to the following:

#### Population abundance at age (1000s)

Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1972	1611.3	1695.9	1110	1699.2	866.3	1310.3	1045.1	781.9	1017.2	258.7	178.9	90.3	92.6	54.8	212.8
1973	5225.7	1286.7	1353.5	881.6	1348.6	675.7	977.6	773.4	578.8	753.4	191.7	132.6	66.9	68.6	198.3
1974	5535.3	4172.8	1026.6	1077.9	699.3	1023.1	493.1	709	560.8	419.8	546.4	139	96.1	48.5	193.6
1975	3643.5	4419.9	3328.9	807.7	816.3	524.3	764.3	367.3	528.5	418.3	313.2	407.7	103.7	71.7	180.6
1976	2203.1	2909.4	3526	2625.3	614	608.6	387.6	561.2	269.9	388.6	307.7	230.4	299.9	76.3	185.7
1977	2727.6	1759.1	2317.3	2792.3	2053.1	457.2	443.3	281.8	408.4	196.5	283	224.1	167.8	218.4	190.8
1978	2079.8	2177.9	1393.6	1827.9	2149.4	1530.7	335	317.9	201.7	292.4	140.7	202.7	160.5	120.2	293.1
1979	2380.4	1660	1722.9	1075.8	1405.1	1649.8	1146.9	231.5	216.2	137.1	198.7	95.6	137.7	109	280.8
1980	2350	1900.7	1318.8	1360.9	826.5	1068.8	1224.2	756.6	147.7	137.8	87.4	126.6	60.9	87.7	248.4
1981	2222.5	1876.2	1487.7	1016.7	1019	614.1	748.2	784.7	480.7	93.8	87.5	55.5	80.4	38.7	213.5
1982	2013	1774.4	1463.5	1149.2	753.5	657.5	367.6	446.3	468.4	287.1	56.1	52.3	33.1	48	150.7
1983	1520.1	1606.7	1380.9	1081.3	736.1	429.9	372	208	252.7	265.3	162.6	31.8	29.6	18.8	112.6
1984	1902.9	1213.7	1265.9	1065.5	800.3	487.4	240	204.1	114.2	138.8	145.7	89.3	17.4	16.3	72.2
1985	2320.8	1519.3	959.6	970.1	717.9	458.8	274.2	135.1	115	64.4	78.3	82.2	50.4	9.8	49.9
1986	1803.3	1852.9	1206.5	727.4	647.9	405.7	252.8	151	74.4	63.4	35.5	43.1	45.3	27.8	32.9
1987	1973.2	1439.5	1464.7	884.3	438.7	362.8	226.8	141.7	84.8	41.8	35.7	20	24.3	25.5	34.2
1988	1378.5	1575	1137.1	1055.3	522.2	245.2	202.5	126.9	79.4	47.5	23.5	20	11.2	13.6	33.5
1989	1983.3	1100.3	1239.4	789.6	563.9	265.6	124.7	103.2	64.8	40.6	24.3	12	10.2	5.7	24.1
1990	1415.3	1582.8	866.1	820.6	391.9	268.6	126.6	59.6	49.4	31	19.4	11.7	5.8	4.9	14.3
1991	1062.8	1129.7	1247.3	562.8	338.9	147.5	101.6	48.4	23	19.1	12	7.5	4.5	2.2	7.5
1992	1072.9	848.3	886.9	774	241.6	139.4	61.4	43	20.7	9.9	8.2	5.2	3.3	2	4.2
1993	972.6	856.7	677.2	697.1	402.4	91.8	52.9	23.3	16.3	7.9	3.8	3.1	2	1.2	2.3
1994	1240.3	776.7	684	534.7	392.1	176.8	40.6	23.5	10.4	7.3	3.5	1.7	1.4	0.9	1.6
1995	975.1	990.4	620.1	540.4	308	177.8	80.4	18.5	10.7	4.7	3.3	1.6	0.8	0.6	1.1
1996	793.7	778.7	790.7	488.3	293.9	128.3	74.2	33.7	7.8	4.5	2	1.4	0.7	0.3	0.7
1997	1329.8	633.8	621.7	622.6	261.4	117.2	51.2	29.7	13.5	3.1	1.8	0.8	0.6	0.3	0.4

1998	945.5	1061.9	506	491.6	359.9	114.5	51.2	22.4	13	5.9	1.4	0.8	0.3	0.2	0.3
1999	1028.8	755	847.8	400.9	308.5	186.6	59.4	26.6	11.6	6.8	3.1	0.7	0.4	0.2	0.3
2000	1688	821.5	602.8	676	305.9	203.5	118.3	37.5	16.8	7.4	4.3	1.9	0.4	0.3	0.3
2001	1505.9	1347.9	656	481.2	534.6	234.9	155.1	90.1	28.6	12.8	5.6	3.3	1.5	0.3	0.4
2002	1425	1202.3	1073	515.6	367.6	384	166.2	109.6	63.7	20.2	9.1	4	2.3	1	0.5
2003	861	1137.8	958.1	845.5	394.7	268.3	276.9	119.7	79	45.9	14.6	6.5	2.9	1.7	1.1
2004	1768.6	687.5	906.9	757.7	656	293.2	197.3	203.5	88	58	33.7	10.7	4.8	2.1	2.1
2005	1680.1	1412.1	547.7	716.7	588.9	489.2	216.7	145.8	150.4	65	42.9	24.9	7.9	3.5	3.1

## Population and Spawning stock biomass in pounds

Year	Population Biomass (lbs)	SSB (lbs)
1972	17,216,906	16,641,300
1973	16,594,472	15,688,790
1974	16,334,691	15,116,400
1975	16,647,581	15,419,170
1976	16,803,145	15,790,450
1977	16,790,890	15,912,000
1978	16,303,115	15,567,240
1979	15,473,300	14,782,690
1980	14,232,734	13,558,350
1981	12,738,458	12,084,280
1982	10,882,184	10,263,240
1983	8,937,722	8,404,630
1984	7,823,939	7,144,930
1985	6,961,734	6,234,410
1986	6,324,901	5,600,140
1987	5,889,688	5,166,980
1988	5,496,332	4,705,090
1989	4,900,315	3,982,420
1990	4,276,198	3,297,320
1991	3,471,360	2,592,330
1992	3,001,934	2,256,410
1993	2,783,853	2,112,760
1994	2,703,394	2,037,620
1995	2,648,796	2,070,770
1996	2,500,551	1,964,690
1997	2,425,376	1,874,080
1998	2,437,310	1,876,290
1999	2,565,801	2,035,410
2000	3,020,272	2,404,480
2001	3,693,975	2,996,760
2002	4,202,585	3,460,860
2003	4,617,393	3,953,690
2004	5,053,242	4,366,960
2005	5,469,759	4,724,980

## Fishery selectivity at age and size

Figure 20. Red porgy: Estimated selectivities of commercial handline. A) Period one (1972–1991); B) Period two (1992–1998); and C) Period three (1999–2004). In period one, age at 50% selection estimated annually—average curve presented.

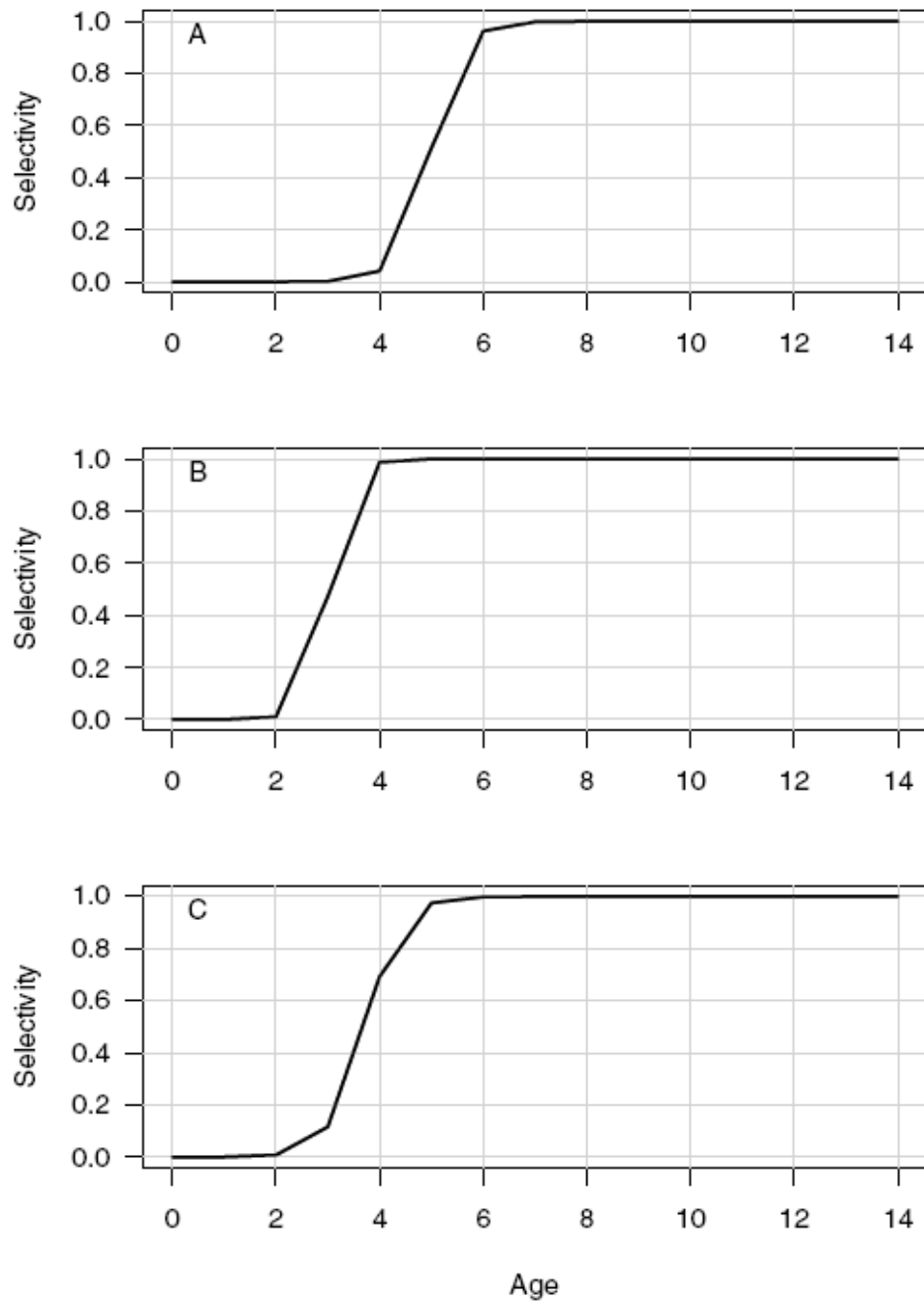


Figure 21. Red porgy: Estimated selectivities of commercial trap. A) Period one (1972-1991); B) Period two (1992-1998) and Period three (1999-2004).

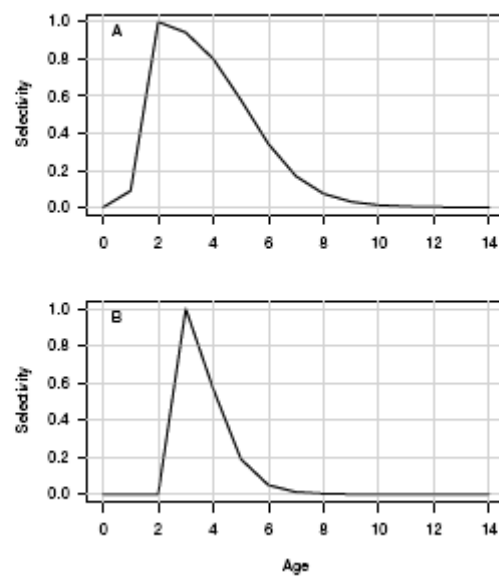


Figure 22. Red porgy: Estimated selectivity of commercial trawl.

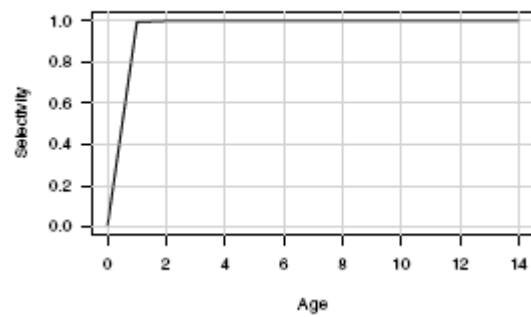


Figure 23. Red porgy: Estimated selectivities of recreational (headboat and MRFSS) fisheries. A) Period one (1972-1991); B) Period two (1992-1998); and C) Period three (1999-2004). In period one, age at 50% selection estimated annually—average curve presented.

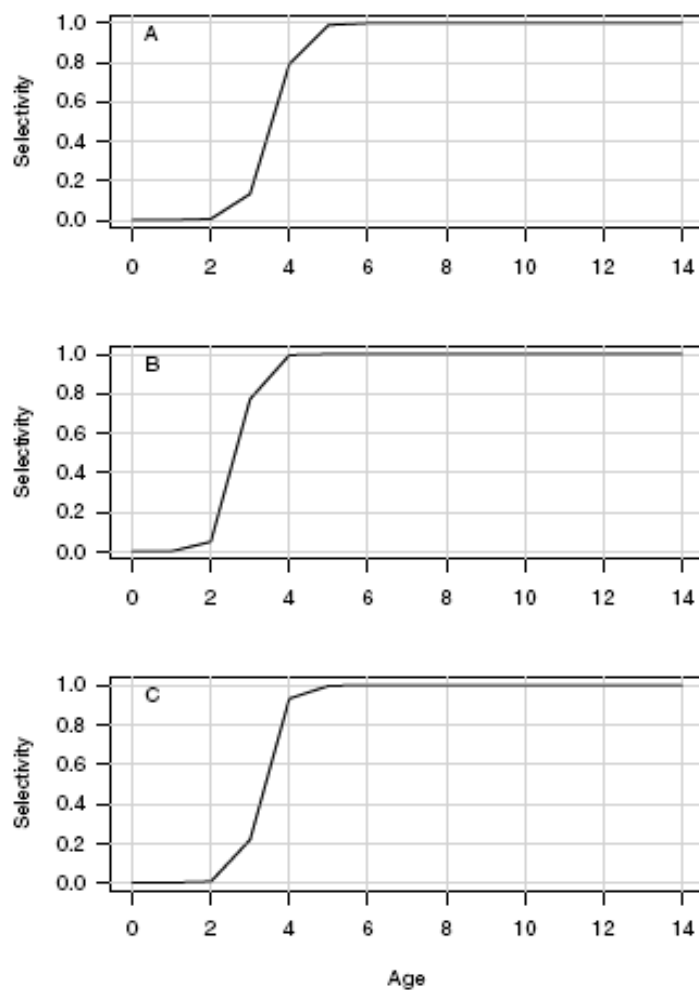
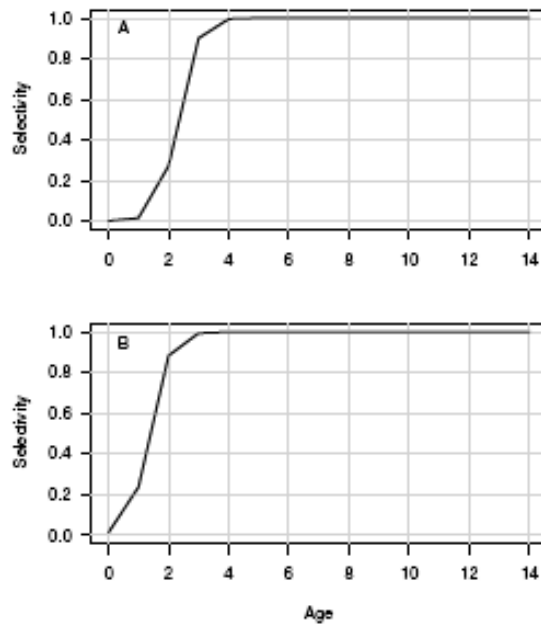


Figure 24. Red porgy: Estimated selectivities applied to discard rates in 2001-2004. A) Commercial hand-line; B) Recreational (headboat and MRFSS).



Fully recruited fishing mortality

Year	F
1972	0.0801
1973	0.0979
1974	0.0739
1975	0.0896
1976	0.0976
1977	0.1116
1978	0.1615
1979	0.2264
1980	0.2307
1981	0.2952
1982	0.3463
1983	0.3806
1984	0.3541
1985	0.3734
1986	0.3619
1987	0.3617
1988	0.4555
1989	0.5211
1990	0.7662
1991	0.6789
1992	0.7565
1993	0.6182
1994	0.5822
1995	0.6669

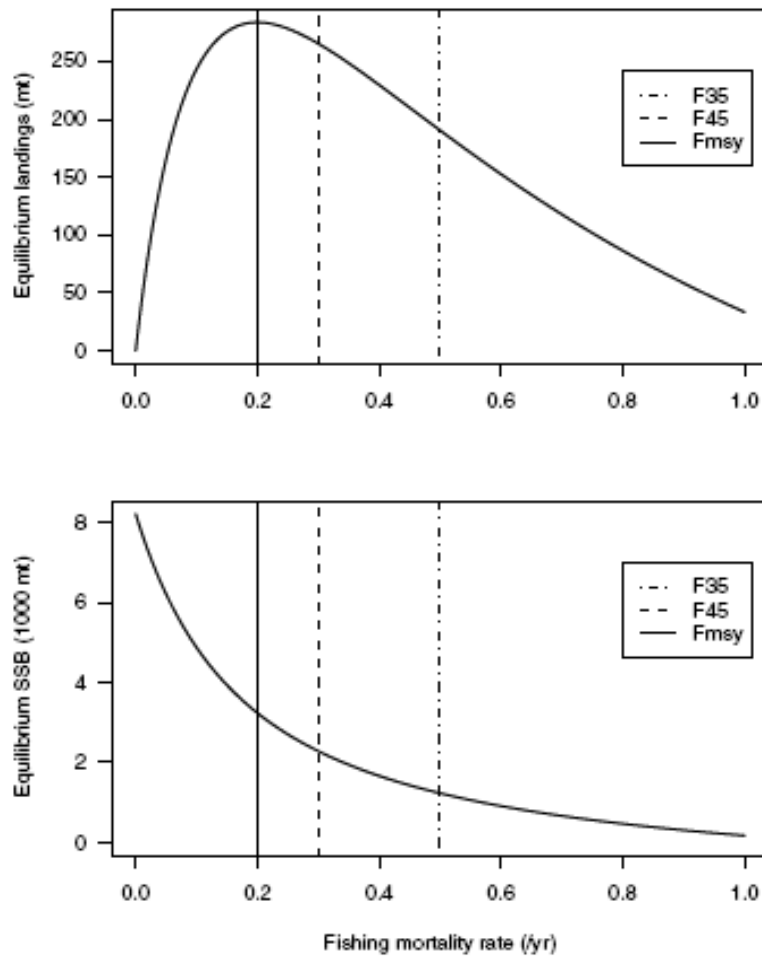
1996	0.7102
1997	0.6124
1998	0.4411
1999	0.2408
2000	0.0486
2001	0.1232
2002	0.1036
2003	0.0832
2004	0.0782

### Fishing Mortality by age

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1972	0.000	0.001	0.005	0.006	0.024	0.068	0.076	0.076	0.075	0.075	0.075	0.075	0.075	0.075	0.075
1973	0.000	0.001	0.003	0.007	0.051	0.090	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096
1974	0.000	0.001	0.015	0.053	0.063	0.067	0.070	0.069	0.068	0.068	0.068	0.068	0.068	0.068	0.068
1975	0.000	0.001	0.012	0.049	0.069	0.077	0.084	0.083	0.083	0.082	0.082	0.082	0.082	0.082	0.082
1976	0.000	0.003	0.008	0.021	0.070	0.092	0.094	0.093	0.092	0.092	0.092	0.092	0.092	0.092	0.092
1977	0.000	0.008	0.012	0.037	0.069	0.086	0.107	0.109	0.109	0.109	0.109	0.109	0.109	0.109	0.109
1978	0.000	0.009	0.034	0.038	0.040	0.064	0.145	0.161	0.161	0.161	0.161	0.161	0.161	0.161	0.161
1979	0.000	0.005	0.011	0.039	0.049	0.073	0.191	0.224	0.226	0.226	0.226	0.226	0.226	0.226	0.226
1980	0.000	0.020	0.035	0.064	0.072	0.132	0.220	0.229	0.229	0.229	0.229	0.229	0.229	0.229	0.229
1981	0.000	0.023	0.033	0.075	0.213	0.288	0.292	0.291	0.291	0.290	0.290	0.290	0.290	0.290	0.290
1982	0.000	0.026	0.078	0.220	0.336	0.345	0.344	0.344	0.343	0.343	0.343	0.343	0.343	0.343	0.343
1983	0.000	0.013	0.034	0.076	0.187	0.358	0.375	0.375	0.374	0.374	0.374	0.374	0.374	0.374	0.374
1984	0.000	0.010	0.041	0.170	0.331	0.350	0.349	0.348	0.348	0.347	0.347	0.347	0.347	0.347	0.347
1985	0.000	0.006	0.052	0.179	0.346	0.371	0.372	0.371	0.371	0.371	0.371	0.371	0.371	0.371	0.371
1986	0.000	0.010	0.086	0.281	0.355	0.357	0.354	0.352	0.351	0.350	0.350	0.350	0.350	0.350	0.350
1987	0.000	0.011	0.103	0.302	0.357	0.358	0.356	0.354	0.354	0.353	0.353	0.353	0.353	0.353	0.353
1988	0.000	0.015	0.140	0.402	0.451	0.451	0.449	0.447	0.447	0.446	0.446	0.446	0.446	0.446	0.446
1989	0.001	0.014	0.187	0.475	0.517	0.516	0.514	0.512	0.510	0.510	0.510	0.510	0.510	0.510	0.510
1990	0.000	0.013	0.206	0.659	0.752	0.747	0.737	0.729	0.725	0.723	0.722	0.722	0.721	0.721	0.721
1991	0.000	0.017	0.252	0.621	0.663	0.651	0.636	0.624	0.618	0.615	0.614	0.614	0.614	0.613	0.613
1992	0.000	0.000	0.016	0.429	0.743	0.745	0.743	0.742	0.742	0.742	0.742	0.742	0.742	0.742	0.742
1993	0.000	0.000	0.011	0.350	0.598	0.591	0.587	0.586	0.585	0.585	0.585	0.585	0.585	0.585	0.585
1994	0.000	0.000	0.011	0.327	0.566	0.562	0.559	0.558	0.558	0.558	0.558	0.558	0.558	0.558	0.558
1995	0.000	0.000	0.014	0.384	0.651	0.649	0.646	0.645	0.645	0.645	0.645	0.645	0.645	0.645	0.645
1996	0.000	0.000	0.014	0.400	0.695	0.694	0.692	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691
1997	0.000	0.000	0.010	0.323	0.600	0.602	0.601	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
1998	0.000	0.000	0.008	0.241	0.432	0.432	0.431	0.430	0.430	0.430	0.430	0.430	0.430	0.430	0.430
1999	0.000	0.000	0.002	0.045	0.191	0.231	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233
2000	0.000	0.000	0.000	0.010	0.039	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047
2001	0.000	0.003	0.016	0.044	0.106	0.121	0.122	0.122	0.122	0.122	0.122	0.122	0.122	0.122	0.122
2002	0.000	0.002	0.013	0.042	0.090	0.102	0.103	0.103	0.103	0.103	0.103	0.103	0.103	0.103	0.103
2003	0.000	0.002	0.010	0.029	0.072	0.082	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
2004	0.000	0.002	0.010	0.027	0.068	0.077	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078

## Yield in pounds

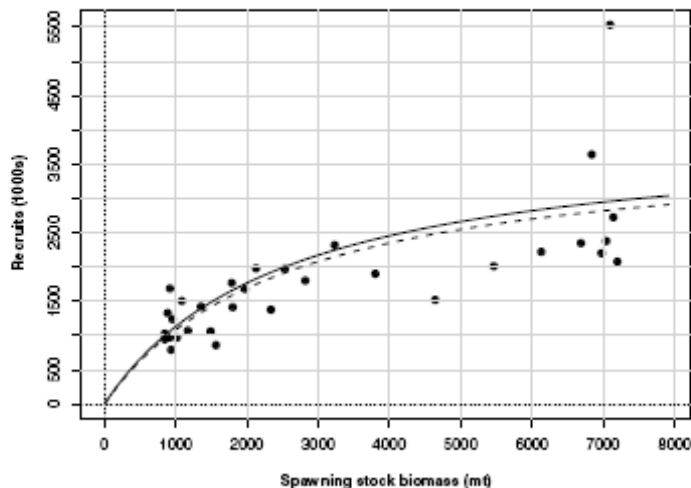
Figure 32. Red porgy: Equilibrium  $A$  landings and  $B$ )  $SSB_t$ , as expected from the estimated stock-recruit curve with bias correction. Vertical lines represent  $F_{MSY}$ , the  $F$  that maximizes equilibrium landings, and  $F_{35\%}$  and  $F_{45\%}$ , as computed from per recruit analysis.





## Stock-recruitment relationship

Figure 28. Estimated stock-recruitment relationship of red porgy. Circles represent estimated recruitment values from assessment period; Dashed curve is estimated relationship; Solid curve is estimated relationship with lognormal bias correction, from which benchmarks are derived.



6. Update measures of uncertainty and provide representative measures of precision for stock parameter estimates.

Red porgy: Estimated status indicators, benchmarks, and related quantities from the catch-at-age model, conditional on estimated current selectivities. Precision is represented by 10th and 90th percentiles of stochastic simulations. Exploitation rates  $E$  are of ages 2+. Estimates of yield  $Y1$ ,  $Y2$ , and  $Y3$  correspond to sustainable yield given  $F = 65\%$  FMSY,  $F = 75\%$  FMSY, and  $F = 85\%$  FMSY, respectively; estimates of yield  $Y35\%$ SPR and  $Y45\%$ SPR correspond to sustainable yield given  $F35\%$  and  $F45\%$ , respectively. Estimates of yield do not include discards;  $D_{MSY}$  represents discard mortalities expected when fishing at FMSY. Rate estimates ( $F$ ,  $E$ ) are in units of per year; status indicators are dimensionless; and biomass estimates are in units of mt or pounds, as indicated.

Quantity	Estimate (mt)	Precision	Estimate (lbs)
$F_{MSY}$	0.2	—	—
$F_{35\%}$	0.5	—	—
$F_{45\%}$	0.3	—	—
$E_{MSY}$	0.063	—	—
$SSB_{MSY}$	3,236	(2777, 3606)	7,134,209
MSST	2,508	(2152, 2795)	5,529,012
MSY	284	(240, 320)	625,699
$D_{MSY}$	119	(102, 134)	262,350
$Y1$	267	(230, 299)	587,901
$Y2$	276	(237, 309)	608,099
$Y3$	281	(240, 316)	619,915
$Y35\%$ SPR	190	(148, 220)	419,962

Y45%SPR	265	(219, 304)	585,146
$F_{2004}/F_{MSY}$	0.391	—	—
$E_{2004}/E_{MSY}$	0.421	—	—
$SSB_{2005}/SSB_{MSY}$	0.661	(0.593, 0.770)	—
$SSB_{2005}/MSST$	0.853	(0.7645, 0.994)	—

7. Update estimates of stock status and SFA parameters and provide declarations of stock status relative to SFA criteria. Quantities to be provided are those currently in place under Amendment 12 and those proposed in Amendment 13B to the snapper-grouper FMP. Yields should be reported in pounds to the pound.

1. MSY:

Yield at  $F_{msy}$  (proposed): 625,699 lbs.

$F_{35\%SPR}$  (current): 419,962 lbs.

2. MFMT:

$F_{msy}$  (proposed): 0.20

$F_{msy}$  proxy of  $F_{35\%SPR}$  (current): 0.50

3.  $F_{oy}$  and OY based on:

$F_{45\%SPR}$ , (current): 0.30

65% of  $F_{msy}$ : 0.13

75% of  $F_{msy}$ : 0.15

85% of  $F_{msy}$  (proposed): 0.17

4. MSST

$(1-M)SSB_{msy}$ , (current): 5,529,012 lbs.

$(0.75)SSB_{msy}$  (proposed): 5,350,657 lbs.

5.  $B_{current}/MSST$  : 0.853

$F_{current}/MFMT$ : 0.391

6.  $T_{min}$ : 10 years

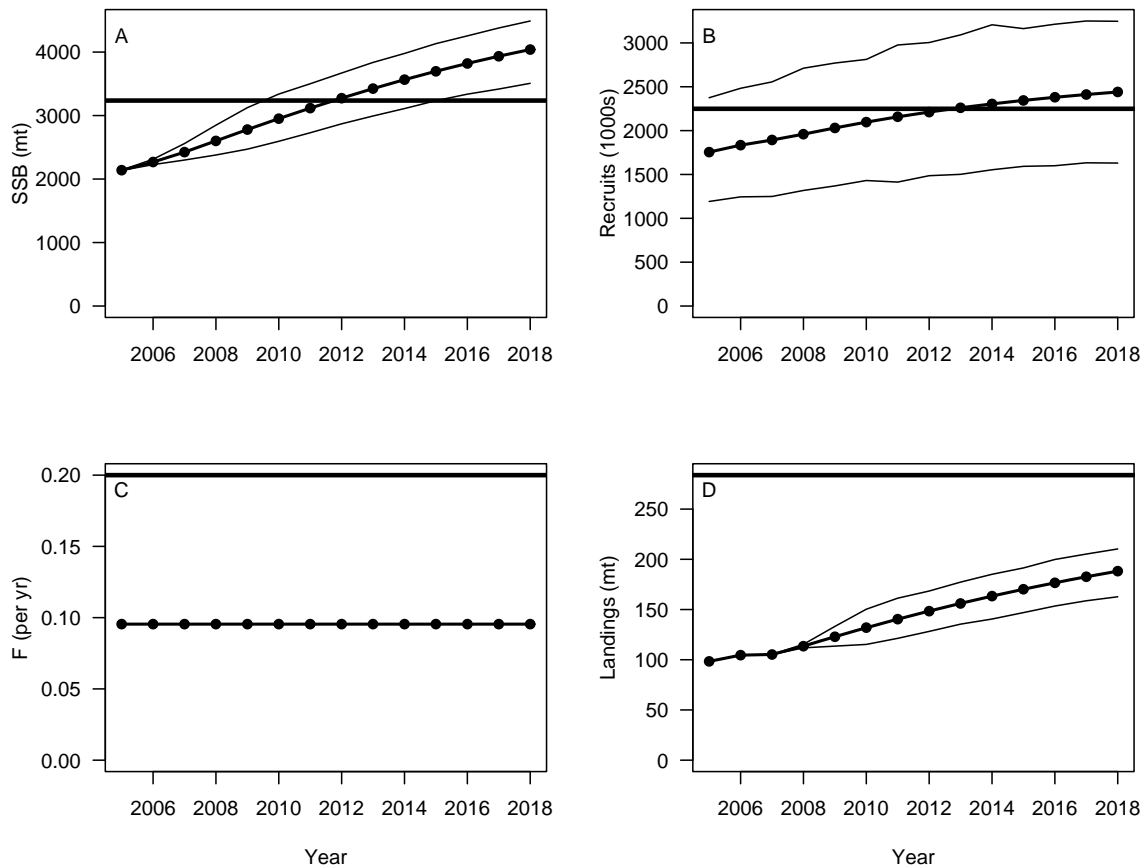
generation time: 8 years

8. Evaluate stock performance with reference to the current rebuilding plan and alternatives proposed in Amendment 13b.

[NOTE: Amendment 12 implemented an 18 yr rebuilding program beginning in 1999 and ending in 2017. Amendment 13B proposes fixed landings and fixed exploitation rebuilding strategies. Landings are averaged over 3 year blocks under the fixed exploitation alternative. Amendment 13B alternatives are based on the ‘Discard sensitivity runs’ which account for dead discards. Values for the rebuilding strategy in Amendment 13B are taken from “Red Porgy Projections Under Five Potential Management Strategies”, Beaufort Population Dynamics Team, June 12, 2003.]

Provide estimates of future exploitation, yield, abundance, and biomass for the following alternatives:

- 1) Status quo: average exploitation since Amend. 12.



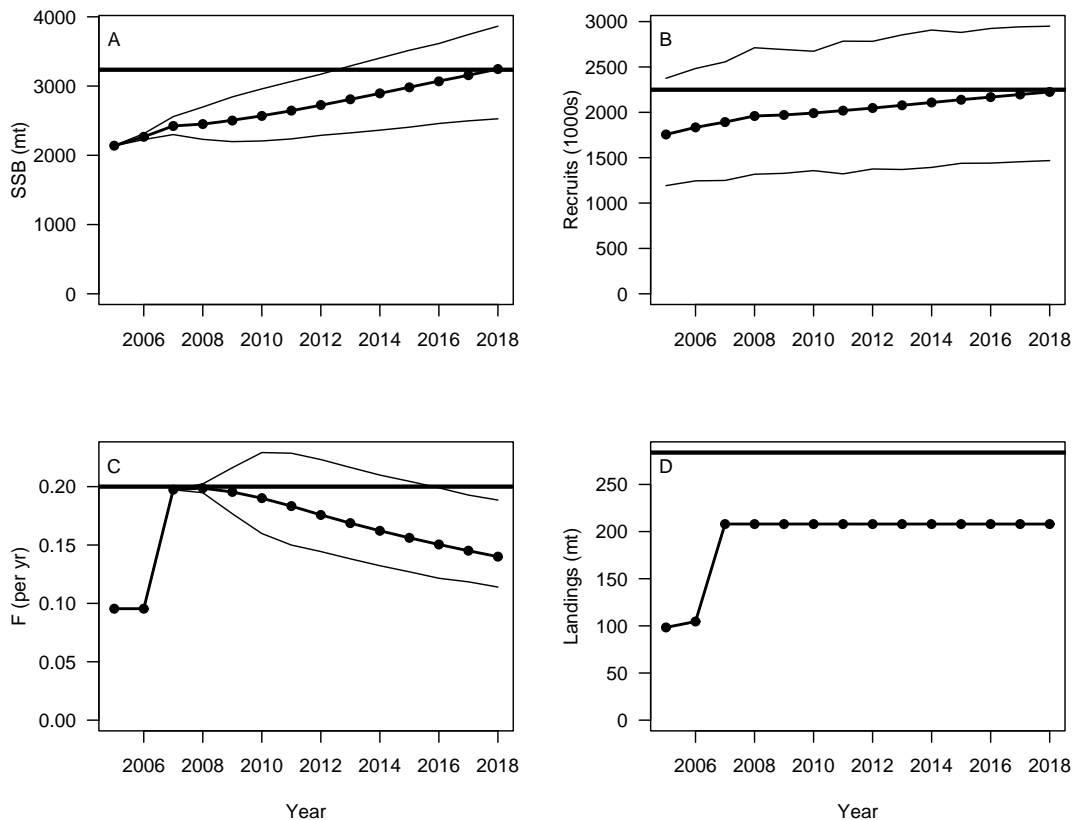
- 2) Amend. 13B alternative 2: constant catch = 381,399 pounds.  
(Red Porgy Projections Doc. Alt. 1)

*Not run because 13B does not exist*

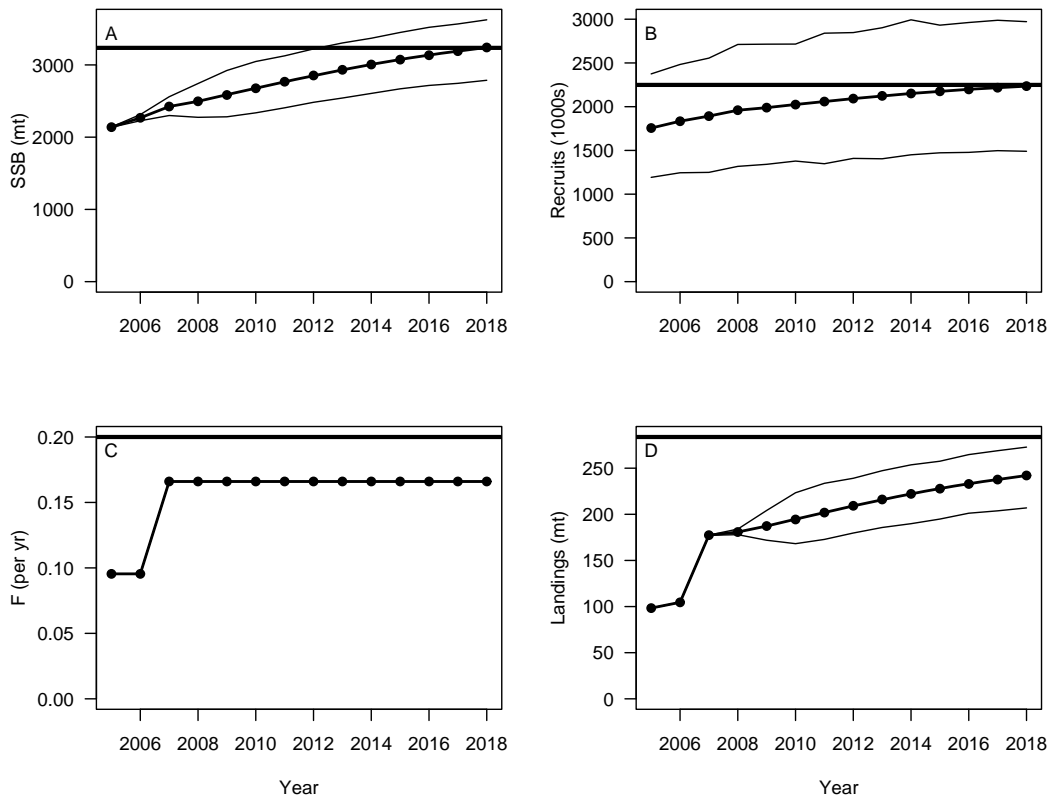
- 3) Amend. 13B alternative 3: constant exploitation with 3 yr blocks of average landings beginning in 2005 (i.e., 2005-2007; 2008-2010).  
(Red Porgy Projections Doc. Alt. 2)

*Not run because 13B does not exist*

- 4) Maximum fixed landings (and associated exploitation rates) that will allow stock recovery by 2017.



- 5) Maximum fixed exploitation rate (and associated 3 yr avg landings starting in 2005) that will allow stock recovery by 2017.



9. Recommend sampling intensity in terms of the number of sampling events and the quantity of individual lengths measured and age structures taken by gear, quarter, state, market category, fishery, and area in order to complete the ACCSP sampling design matrix.

*This was not addressed in the stock assessment report.*

10. Review the research recommendations from the previous assessment, note any that have been completed, and make any necessary additions or clarifications.

Recommendations made by the 2002 benchmark Assessment Workshop are reproduced here verbatim.

Each is followed by a brief progress report.

1. The discrepancy between SC and NC ageing is a major one that must be resolved, preferably before the next assessment. The SAW recommends that as soon as possible, the NC and SC investigators meet and share age readings techniques, to resolve the systematic discrepancies in age determinations, if possible. The SAW further recommends that research be undertaken that will accomplish verification of ageing in red porgy.

Investigators from NC and SC have made substantial progress in resolving ageing discrepancies. By comparing age determinations by different readers on the same

scales, analysts have determined that many differences are due to reading whole vs. sectioned otoliths.

Based on general understanding of ageing fish, the AW concluded that ages based on sectioned otoliths are likely to be more accurate. To test this belief, however, red porgy are being reared at the NOAA Beaufort Laboratory. It is expected that this research will provide age verification in time for use in the next benchmark assessment.

2. The protogyny of red porgy is a life-history feature that complicates assessment and management. The SAW recommends that sampling for sex ratio at length be instituted in each fishery and that population sampling for sex ratio at length be continued by the MARMAP program. The SAW further recommends that research be instituted into assessment and population-projection methods that can make better use of sex-ratio data that exist now and that may exist in the future.

Annual sampling of sex ratio at length by MARMAP continues as normal. Also, MARMAP provides analysis of sex at length and age from commercial samples in roughly two of every ten years, and this research is continuing.

The difficulty in obtaining representative samples of ungutted fish was noted by the group.

3. Under many forms of management, considerable discarding of red porgy could be expected to occur. The SAW recommends that sampling programs be initiated to quantify discard rates, especially in the commercial fishery, where the discard mortality rate is believed higher, and to estimate discard mortality rates. The SAW recommends that research be instituted on management strategies that could reduce discard mortality and also research to illustrate the effects of discard mortality. The SAW also recommends that socioeconomic research be considered on educational measures to assist fishery participants in minimizing discard mortality and understanding the value of doing so.

The Headboat Survey, since 2004, has collected data on number of live and dead discards; however, size composition of the discards is unknown. The commercial logbook program also collects information on discards, again without corresponding data on size.

Socioeconomic investigators were not present at the update assessment workshop to report progress on the socioeconomic recommendation.

4. Fishery-independent data collected by the MARMAP program have served an important role in understanding the dynamics of this population, and the National Research Council has recommended that fishery independent data play a more important role in stock assessment generally. However, the MARMAP sampling programs have been criticized by some as not having ideal extent, both in area

coverage and in sampling intensity, for red porgy. The SAW recommends that the MARMAP program expand its coverage as needed.

The MARMAP program has made considerable efforts to expand coverage in the northern and southern portions of the South Atlantic Bight. Three exploratory cruises were conducted in 2003 and 2004 to identify deepwater reefs off North Carolina, and some of the sites located were sampled using vertical longlines in 2004 and 2005. Efforts are continuing to locate additional live bottom and reef habitats through contacts with commercial and recreational fishermen and scientists. However, MARMAP funding was cut considerably for fiscal year 2006, which severely restricts the amount of time the program can spend at sea.

5. During the DW and SAW, it was noted that some incomplete, or misleading data have been entered in the NMFS general canvass database. In particular, some data are available only under aggregated categories (e. g., porgies), even when accepted corrections to provide estimates of red porgy landings exist. The SAW recommends that state agencies contact and work with NMFS personnel maintaining the general canvass data base to make sure that data in that central data base are at the most disaggregated level possible and as accurate as possible. The goal is that future red porgy assessment should be able to use data from the general canvass database with confidence and without further corrections.

Workshop participants from NC DMF report progress in correcting their records in the NMFS general canvass database.

11. Provide the complete updated time series of all input data in a format accessible to all workshop participants. Catches shall be included in pounds as originally reported.

Table 8. Landings of red porgy in thousands of pounds (klb). MRFSS landings comprise  $A + B1 + 0.08B2$  in 1972-2000;  $A + B1$  in 2001-2004 (years in which discards were modeled separately).

Year	Commercial (klb)			Recreational (klb)		Total
	Handln	Trap	Trawl	Hdbt	MRFSS	
1972	72.4	29.5	0.7	530.0	107.4	739.8
1973	84.3	8.4	13.0	749.2	107.4	962.2
1974	82.8	25.5	0.0	517.4	107.4	733.1
1975	158.3	39.4	1.2	452.5	107.4	758.8
1976	175.0	36.7	39.3	391.3	107.4	749.6
1977	269.2	19.4	148.5	542.1	107.4	1086.5
1978	718.7	0.3	7.4	529.5	107.4	1363.2
1979	979.5	4.1	83.1	346.8	107.4	1520.8
1980	931.0	9.9	292.8	358.1	107.4	1699.2
1981	1247.3	20.8	303.1	324.8	5.6	1901.5
1982	1371.8	10.9	223.3	431.9	11.2	2049.2
1983	1160.1	22.0	113.7	261.4	41.5	1598.8
1984	1040.8	22.1	62.1	217.0	163.7	1505.7
1985	841.2	6.5	15.8	260.4	215.2	1339.1
1986	875.8	30.3	15.1	222.1	19.6	1163.0
1987	755.2	22.3	9.7	220.5	75.0	1082.6
1988	845.7	22.6	24.7	215.5	161.8	1270.4
1989	900.0	24.4	0.0	165.0	139.7	1229.1
1990	1062.5	76.1	0.0	125.3	240.2	1504.1
1991	728.1	104.3	0.0	140.8	52.1	1025.4
1992	505.2	11.4	0.0	109.9	118.5	744.9
1993	442.5	27.6	0.0	101.0	67.2	638.3
1994	423.9	17.6	0.0	87.6	45.5	574.5
1995	419.0	14.8	0.0	93.0	106.3	633.2
1996	418.5	11.4	0.0	82.2	116.3	628.4
1997	417.1	8.7	0.0	75.3	18.3	519.4
1998	310.5	7.5	0.0	69.3	12.7	400.0
1999	100.2	5.0	0.0	48.8	67.8	221.8
2000	24.5	1.7	0.0	14.2	25.5	66.0
2001	66.0	0.7	0.0	46.3	34.6	147.7
2002	63.0	0.8	0.0	33.3	32.6	129.8
2003	53.9	0.2	0.0	34.8	49.6	138.6
2004	53.7	0.8	0.0	49.4	63.9	167.9

Table 22. Discards of red porgy (1000's) by gear, as used in assessment. These values were multiplied by a sector-specific discard mortality rate to estimate dead discards.

Year	Commercial (1000's)	Recreational (1000's)		Coefficients of variation		
	Handln	Hdbt	MRFSS(B2)	Handln	Hdbt	MRFSS
2001	75.3	84.2	43.5	0.10	0.10	0.24
2002	120.0	61.1	16.2	0.10	0.10	0.27
2003	64.1	58.9	43.8	0.10	0.10	0.42
2004	41.6	68.5	48.2	0.10	0.10	0.32



Table 24. Indices of abundance by gear, as used in the catch-at-age model.

Year	Indices			Coefficients of variation		
	MARMAP Traps		Recreational	MARMAP Traps		Recreational
	FL Snapper	Chevron	Headboat	FL Snapper	Chevron	Headboat
1972	-	-	-	-	-	-
1973	-	-	1.990	-	-	0.177
1974	-	-	1.994	-	-	0.156
1975	-	-	1.395	-	-	0.181
1976	-	-	1.175	-	-	0.134
1977	-	-	1.986	-	-	0.096
1978	-	-	2.825	-	-	0.063
1979	-	-	1.888	-	-	0.088
1980	-	-	1.905	-	-	0.088
1981	-	-	1.384	-	-	0.132
1982	-	-	1.388	-	-	0.137
1983	2.941	-	0.677	0.063	-	0.232
1984	0.788	-	0.673	0.472	-	0.232
1985	1.333	-	0.797	0.308	-	0.188
1986	1.801	-	1.055	0.375	-	0.126
1987	1.152	-	0.930	0.217	-	0.138
1988	-	-	0.718	-	-	0.188
1989	-	-	0.753	-	-	0.206
1990	-	1.825	0.426	-	0.063	0.332
1991	-	1.998	0.386	-	0.227	0.348
1992	-	2.260	0.310	-	0.135	0.349
1993	-	1.221	0.235	-	0.195	0.410
1994	-	1.617	0.237	-	0.355	0.406
1995	-	1.681	0.183	-	0.326	0.472
1996	-	1.624	0.222	-	0.180	0.424
1997	-	0.870	0.275	-	0.472	0.415
1998	-	1.177	0.195	-	0.407	0.447
1999	-	1.162	-	-	0.275	-
2000	-	1.049	-	-	0.408	-
2001	-	1.743	-	-	0.349	-
2002	-	1.483	-	-	0.381	-
2003	-	1.265	-	-	0.242	-
2004	-	2.412	-	-	0.091	-

Note: MARMAP CVs scaled to those of headboat.

Figure 4. Landings of red porgy in units of mt. For use in the catch-at-age model, recreational landings (headboat and MRFSS) were in units of 1000s fish; these landings were converted to mt for use in the production model and plotted here for comparison of scale among fisheries.

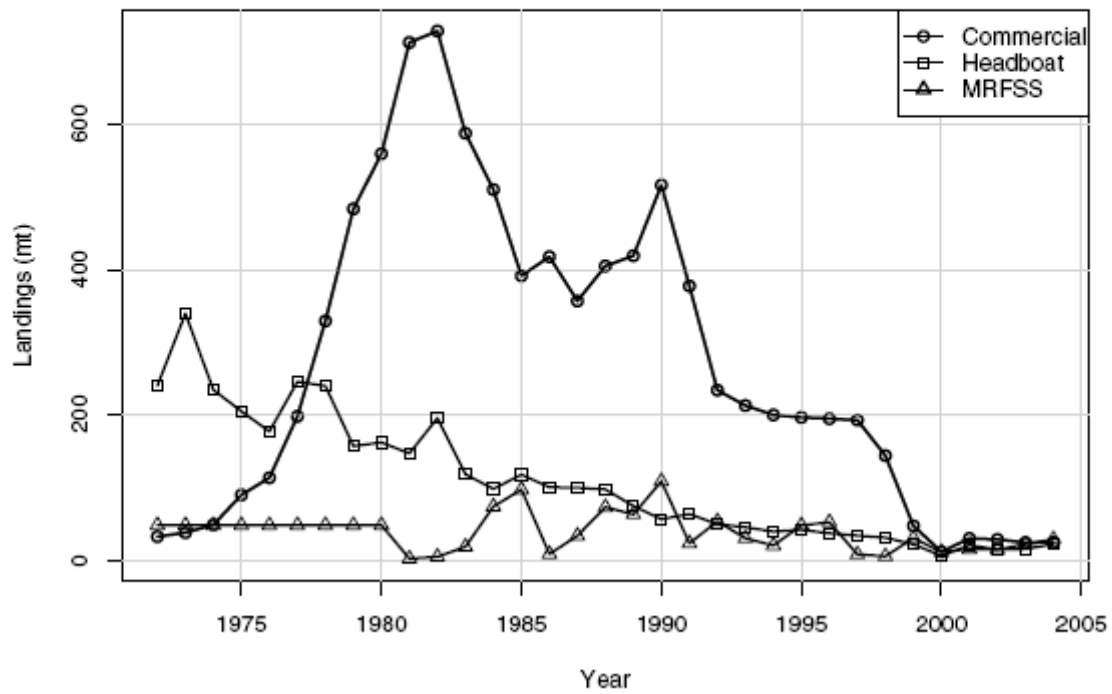
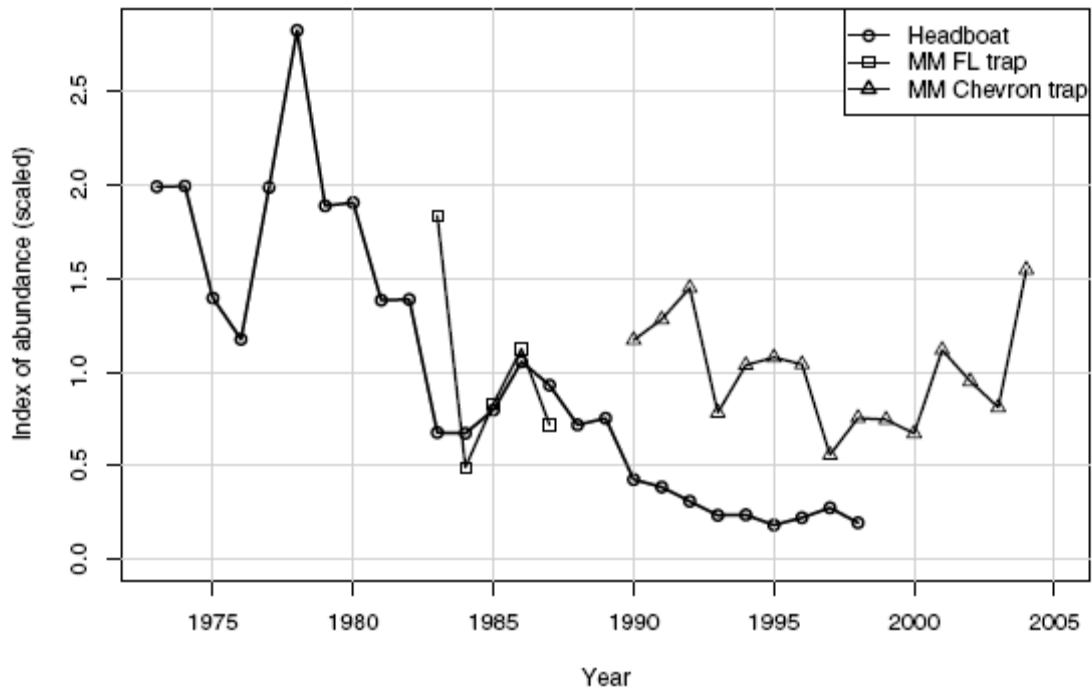


Figure 5. Red porgy: Indices of abundance used in catch-at-age model, with each scaled to its own mean CPUE from MARMAP traps computed in units of number fish per trap-hour, and CPUE from headboat computed in units of number fish per angler-hour.



12. Complete a stock assessment workshop report to fully document the data, methods, and results of the stock assessment update. The report shall be provided to the SAFMC by May 25, 2006 for review by the SSC June 12-13, 2006.

The report should include the following additional information as needed to comply with recommendations of previous review panels:

- provide complete input data and sampling intensities
- provide model specification details, model equations, and parameter definitions and values
- clearly identify fixed values, estimated parameters, derived quantities, and actual observations.

*Done.*

## Red Porgy Advisory Report

June 2006

Status of stock: The stock, is not undergoing overfishing, but is below its biomass limit. The 2005 SSB was about 66% of  $SSB_{MSY}$  and about 85% of MSST. When compared with the 2001 benchmark, we find that the spawning stock biomass has increased. The 2004 fishing mortality rate is estimated to be about 62% of  $F_{MSY}$ . Recruitment is continuing to recover, however, values are still lower than the predicted potential ( $R_0 = 2.249 \times 10^6$ ).

Forecast: There is considerable uncertainty in future rates of recovery due to: uncertainty about the biology of the species, model uncertainty, and quality of the data available.

Three management scenarios were evaluated using projection models. Scenario One: evaluate holding fishing mortality at the current  $F$  (based on the 2001-2004 average); Scenario Two: constant landings that allow for rebuilding by 2018; Scenario Three: maximum constant  $F$  that allows for rebuilding by 2018.

Scenario One indicated that the stock is expected to recover by 2012; six years earlier than the rebuilding plan's original time horizon at the start of 2018 and four years earlier than projected by the previous benchmark assessment. Annual landings are expected to be higher earlier on under scenario two in years 2007-2011 vs. scenario 3, which is expected to have higher landings in years 2012-2017; however, the two scenarios are expected to have similar cumulative landings by 2017 (approximately 5.5 million pounds).

### Landings (1000s of pounds) and Stock Status Table:

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Minimum*	Maximum*	Mean*
Commercial	433.8	429.9	425.8	318	105.2	26.2	66.7	63.8	54.1	54.5	26.2	1606	593.8
Headboat	93	82.2	75.3	69.3	48.8	14.2	46.3	33.3	34.8	49.4	14.2	749.2	237.8
Recreational	106.3	116.3	18.3	12.7	67.8	25.5	34.6	32.6	49.6	63.9	5.6	240.2	86.4
Total	633.2	628.4	519.4	400	221.8	66	147.7	129.8	138.6	167.9	66	2049.2	918.0
SSB	2071	1965	1874	1876	2035	2404	2997	3461	3954	4367	1874	4367	2700
F	0.67	0.71	0.61	0.44	0.24	0.05	0.12	0.10	0.08	0.08	0.05	0.77	0.34
F/ $F_{MSY}$	3.33	3.55	3.06	2.21	1.20	0.24	0.62	0.52	0.42	0.39	0.24	3.83	1.69

\* - Minimum, maximum, and mean based on period 1972-2004

Stock Identification and Distribution: Red porgy have an extensive range in warm waters of the Atlantic Ocean and adjacent seas. The management unit analyzed includes fish from U.S. Atlantic waters of North Carolina (NC) south of Cape Hatteras, South Carolina (SC), Georgia (GA), and the east coast of Florida (FL), including the Atlantic side of the Florida Keys (Monroe County). Red porgy have been most abundant in NC and SC waters. Tagging studies show

neither long-range migrations nor extensive local movements of adult red porgy, and there is no circumstantial or anecdotal information to suggest such movements.

Catches: (Figure 1) Three major fisheries catch this stock of red porgy: commercial, recreational, and headboat. The most common commercial gear has been hook and line, with occasional commercial landings coming from trawls and traps. Trawling for red porgy has been banned since January 12, 1989. Total landings increased during the 1970s and early 1980s as the commercial fishery expanded, rising from about 335 mt in 1972 to 900 mt in 1982. Except for a brief spike in 1988-1990, landings declined steadily from the 1982 peak to the low of under 30 mt in 2000.

During 1972-1977, the headboat fishery was predominant, accounting for an average 64% of landings in weight. From 1978 onward the commercial fishery predominated, representing 53%-82% of annual landings. Recreational fisheries seldom landed more than 10% of the total until 1999-2001, when their landings increased to 34% of the total weight landed. Commercial landings increased during the 1970s, from 47 mt in 1972 to 729 mt in 1982.

The newly added 2001-2004 as included in Figure 1, show that landings from all three sectors have remained relatively stable since 2001.

Data and Assessment: A data-scoping workshop was conducted via teleconference on January 6, 2006, followed by a SEDAR Update Assessment Workshop held April 4 –5, 2006. Participants concluded that the update assessment would include data through 2004. The benchmark assessment used two indices of abundance from the headboat data, where the time series was broken to reflect the introduction of a minimum size limit between 1991 and 1992. The update used a single index spanning 1973-1998. It was decided that the model would be able to account for changes in size limit by estimating the two selectivity patterns from within the assessment model. Two additional indices that had been used in the benchmark were from MARMAP fishery independent sampling: the Florida snapper trap (covering 1983-1987) and the chevron trap (covering from 1990-2001). The scoping committee decided to include the two indices and extend the chevron index through 2004. Landings data from the recreational sector, headboat fishery and combined commercial fisheries were included and incorporated data through 2004. One difference from the benchmark for commercial landings was the incorporation of a linear shift in C.V. (coefficient of variation), signifying the increase in precision of the more current data.

Length and age composition were updated to address the aging issue. Discrepancies in ages between labs were determined to be a function of methodological differences. Whole otolith ages were converted to sectioned otolith ages for the base runs, resulting in an increase in numbers of years included, and the total sample size.

Natural mortality was set at  $0.225 \text{ yr}^{-1}$ . A logistic function (similarly applied to the black sea bass update) to account for observation error smoothed the sex ratios and maturity schedules across ages. Release mortality was set to 0.35 for the headboat and commercial fisheries and 0.08 for recreational. An additional release mortality of 0.86 was applied to commercial discards as a sensitivity run. In the benchmark, discards were included in the total catch, however, since

2001, discard estimates have become available and were accounted for independently in the update. Sensitivity runs with differing natural mortality rates (i.e., 0.20 and 0.25) and ages structured from alternative ageing approaches also were run.

The primary assessment tool was a statistical catch-at-age model, which used catch, length composition, age composition and abundance indices (Figure 2). An additional age-aggregated production model was used to assess the results under a differing set of model constraints, and utilized catch and abundance indices. The base run of the catch-at-age model was the basis of estimation for both benchmarks and stock status.

Biological Reference Points: As outlined in the Terms of Reference, the quantities to be provided are those currently in place under Amendment 12 and those proposed in Amendment 13B to the snapper-grouper FMP. Yields are reported in pounds to the pound.

Quantities include :

1. MSY:  
Yield at  $F_{msy}$  (proposed): 625,699 lbs.  
 $F_{35\%SPR}$  (current): 419,962 lbs.
2. MFMT:  
 $F_{msy}$  (proposed):  $0.20 \text{ yr}^{-1}$   
 $F_{msy}$  proxy of  $F_{35\%SPR}$  (current):  $0.50 \text{ yr}^{-1}$
3.  $F_{oy}$  and OY based on:  
 $F_{45\%SPR}$ , (current):  $0.30 \text{ yr}^{-1}$   
65% of  $F_{msy}$ :  $0.13 \text{ yr}^{-1}$   
75% of  $F_{msy}$ :  $0.15 \text{ yr}^{-1}$   
85% of  $F_{msy}$  (proposed):  $0.17 \text{ yr}^{-1}$
4. MSST  
(1-M)SSB<sub>msy</sub>, (current): 5,529,012 lbs.  
(0.75)SSB<sub>msy</sub> (proposed): 5,350,657 lbs.
5. Bcurrent/MSST : 0.853  
Fcurrent/MFMT: 0.391
6. Tmin: 10 years  
generation time: 8 years

Rebuilding timeframe: Originally established as 18 years (2016). New projections were run under three different management scenarios (see Figures 3, 4, and 5) and indicated rebuilding by 2012 (scenario 1) and 2018 (scenarios 2 and 3).

Fishing Mortality: The results from the update support the trends seen in the benchmark assessment (Figure 6). Fishing mortality rates from the model had an increasing trend from 1972 through 1990 and generally declined until 2000. Fishing mortality rates exceeded  $F_{MSY}$  from the late 1970s through the late 1990s (Figure 7). Relative fishing mortality rates from the age structure and the production model showed similar patterns (Figure 8).

Recruitment: Recruitment was considered to be quite high during the early 1970s, followed by a general decline until the late 1990s. In more recent years, a slight increase is indicated; however, recruitment remains low relative to its potential (Figure 9).

Stock Biomass: The total SSB (reported as males and females combined) declined through 1990 with a slight increase in 1999 and 2000 (Figure 10). The relative SSB/SSB<sub>MSY</sub> from the age-structured and production models were in agreement.

Special Comments: Analysis still does not account for the switch in sex from females to males for this species, nor do we have any information on the potential implications or the effects they might have on the reference points or the recovery estimates

The benchmark assessment incorporated dead discards into the landings. However, estimates of discards were available for 2001 forward and, as a result, were included in the update.

Source of Information: Report of Red Porgy Stock Assessment Update Workshop, April 5-6, 2006, Report dated: May 25, 2006

Figure 1. Time series of historic catches w/ management superimposed

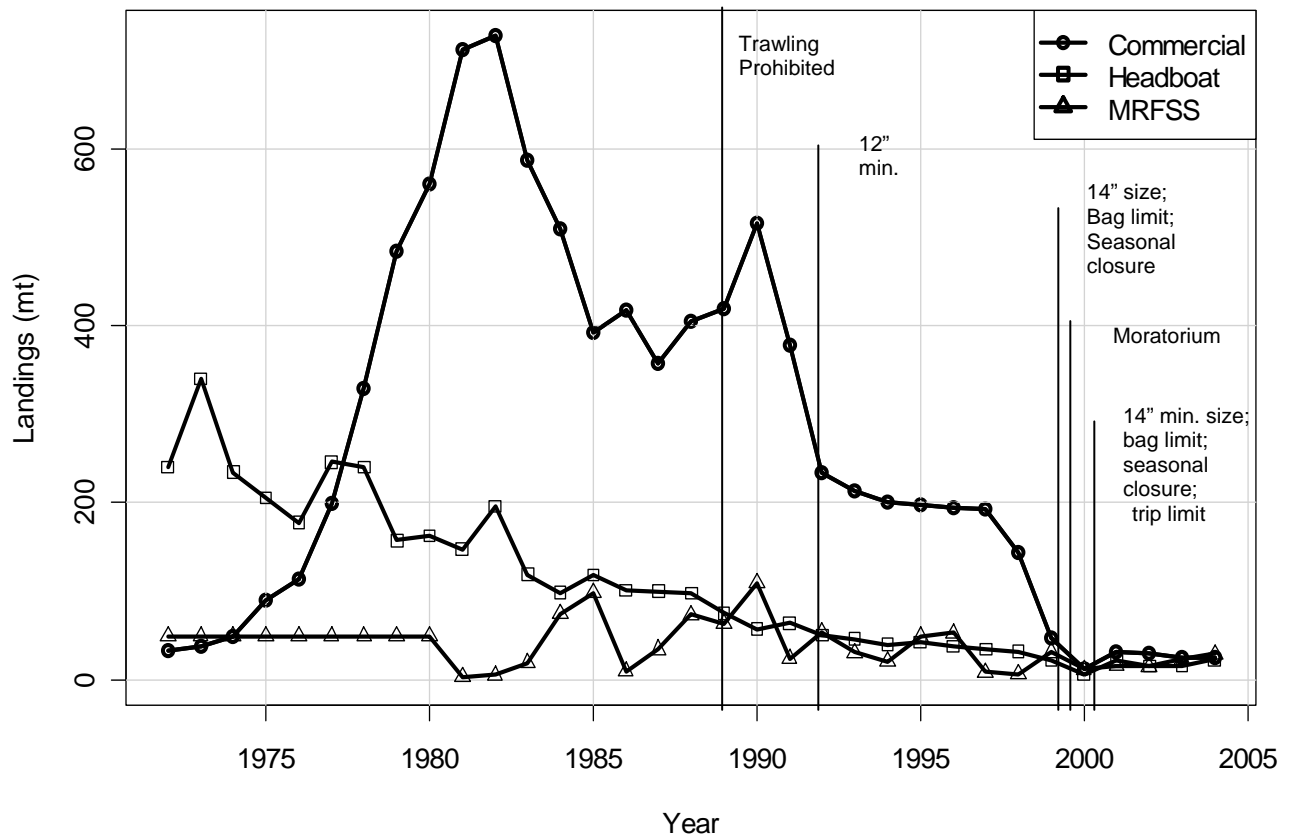




Figure 2. Abundance indices

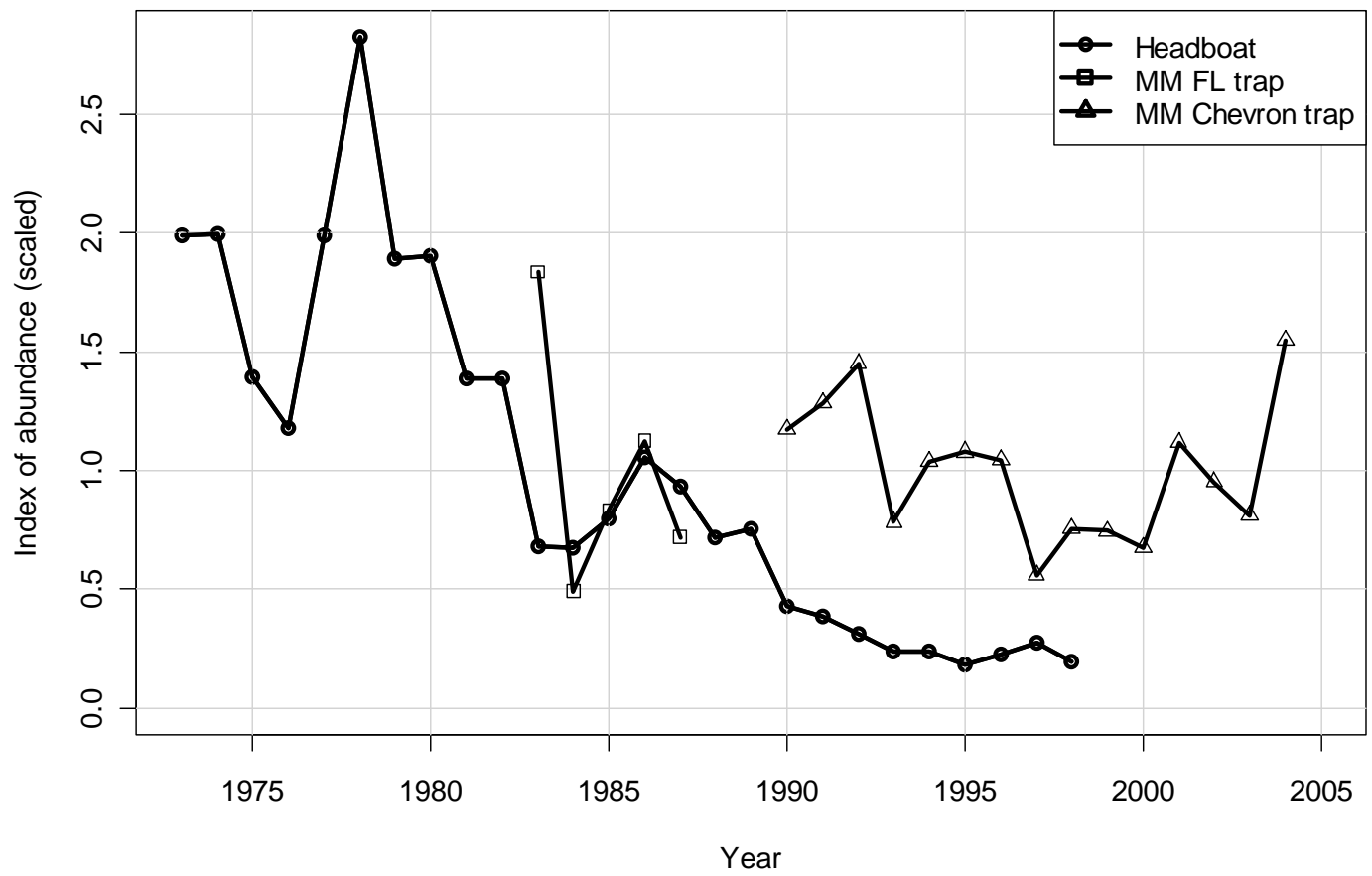


Figure 3 - Projection Scenario 1: Fixed Fishing Mortality Based on Current Rate  
(Amendment 12)

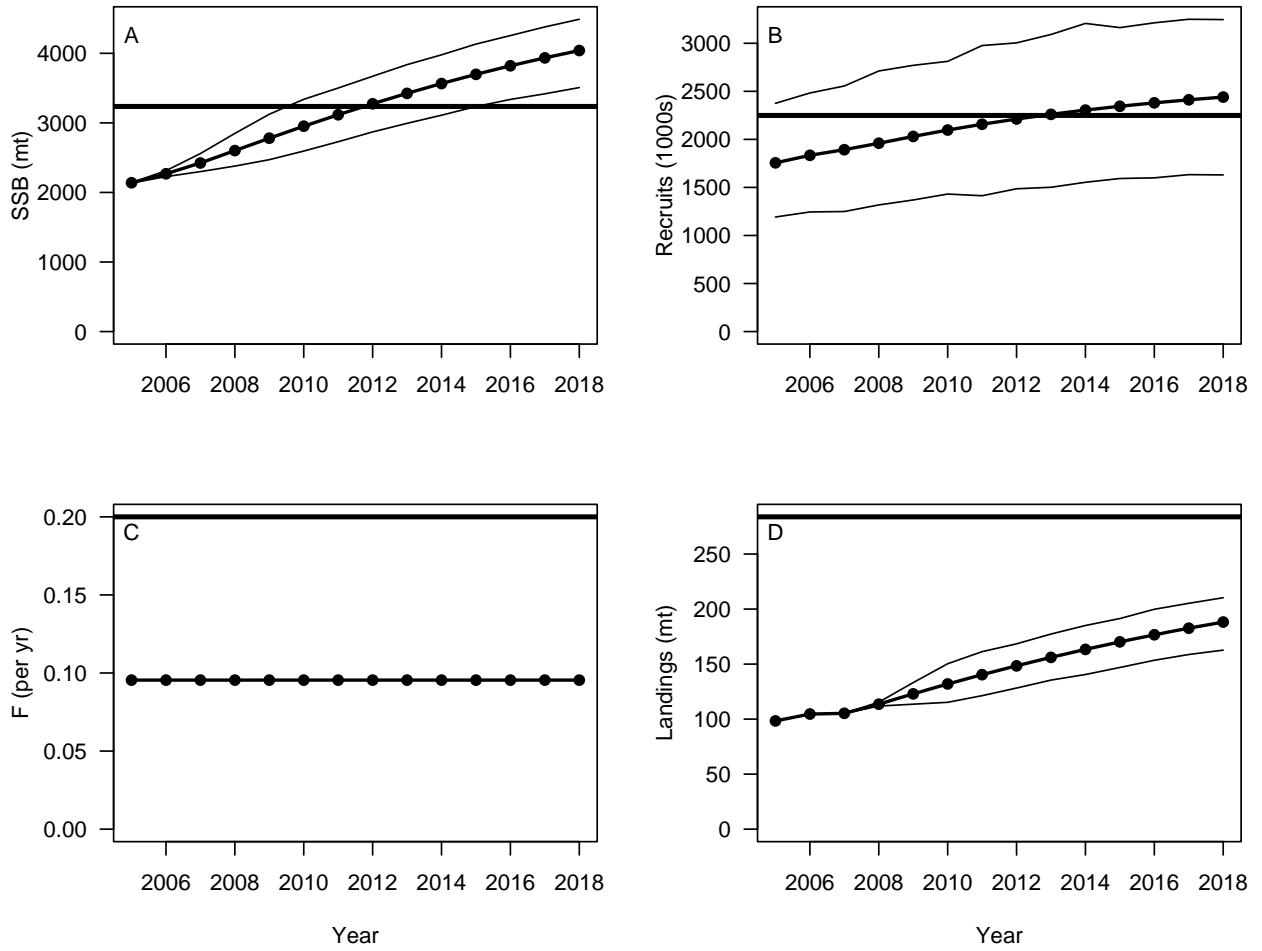


Figure 4 - Projection Scenario 2: Maximized Fixed Landings (equiv. To Amendment 13B, Alternative 2)

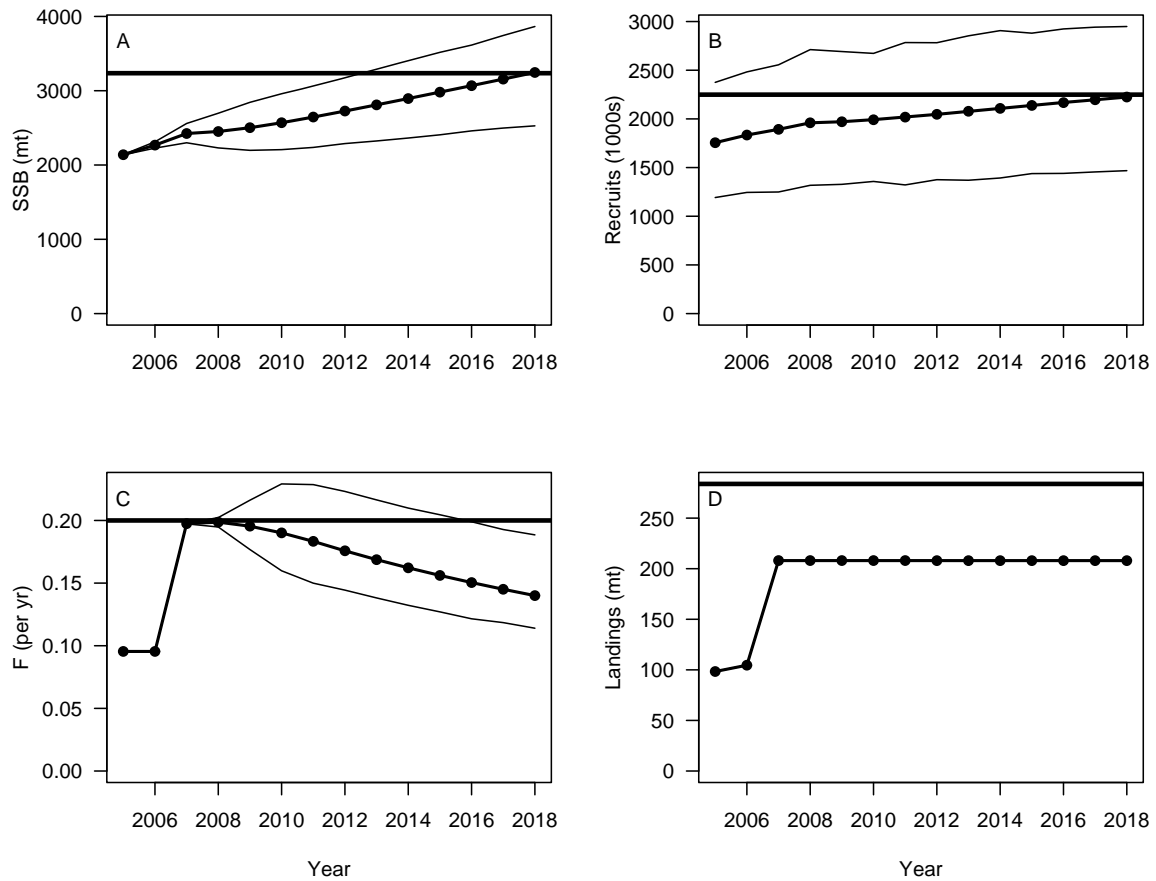


Figure 5 - Projection Scenario 3: Maximized Fixed Fishing Mortality (equiv. to Amendment 13B, Alternative 1)

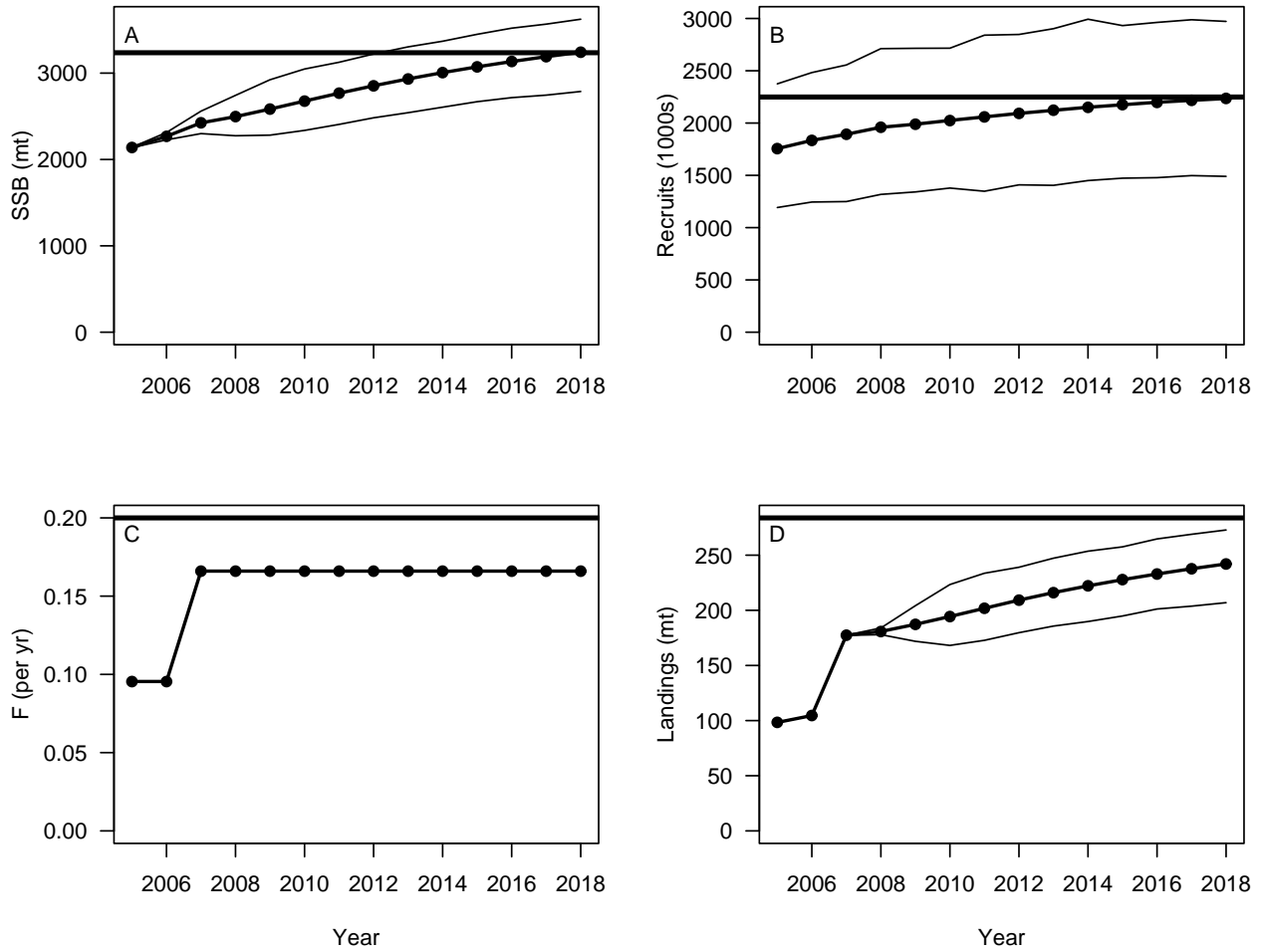


Figure 6 - Red porgy: Comparison of results from the update(circles) and benchmark (triangles) assessment models. A) SSB relative to  $SSB_{MSY}$  and B)  $F$  relative to  $F_{MSY}$ .

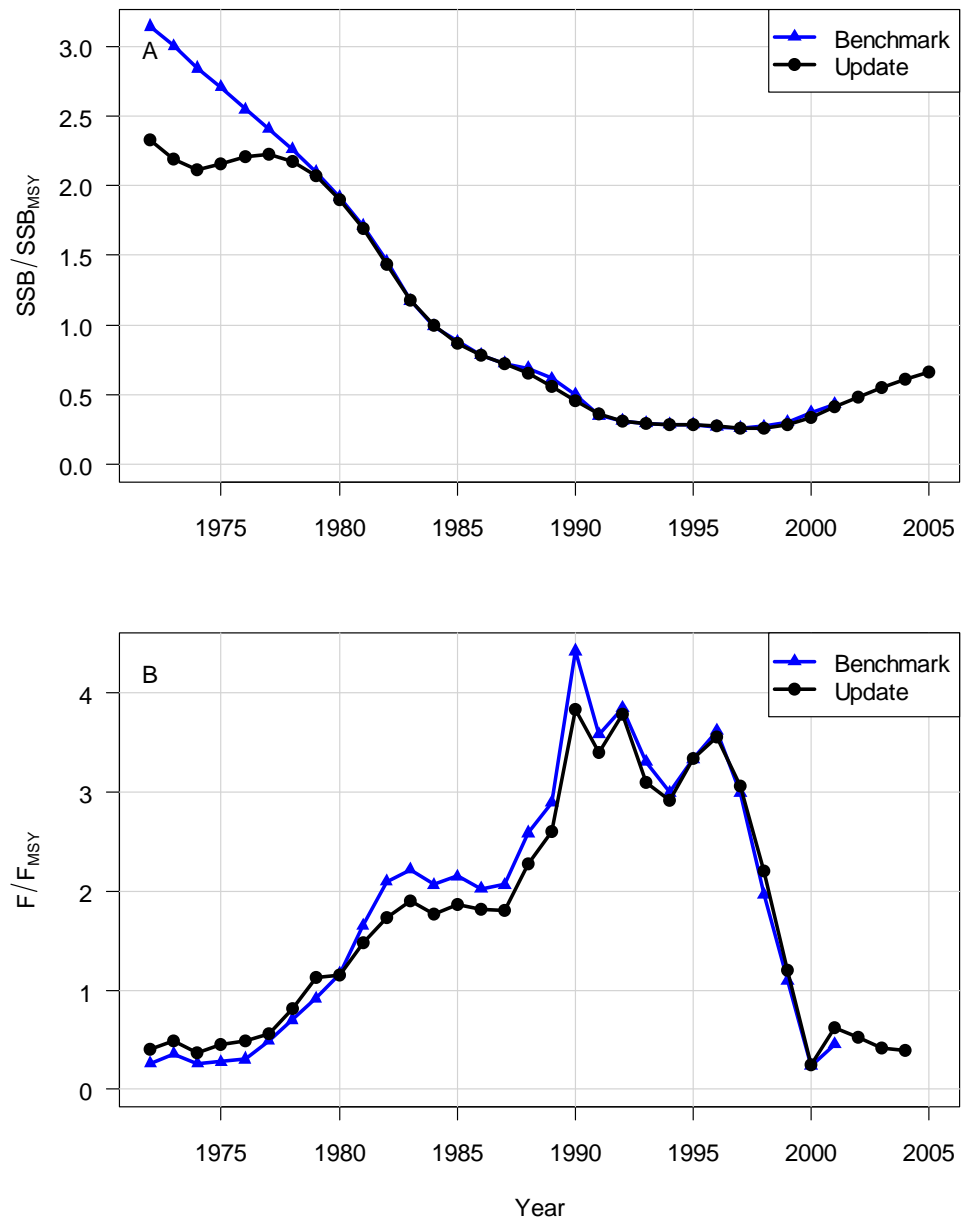


Figure 7 – Red porgy: Estimated time series, relative to MSY benchmarks, of A) SSB, B) fully selected F, and C) exploitation (E) of age 2+ fish. In each panel, a dashed horizontal line at one indicates where an estimated time series would equal its related benchmark; in panel A, a dotted horizontal line at 1- M indicates where estimated SSB would equal MSST.

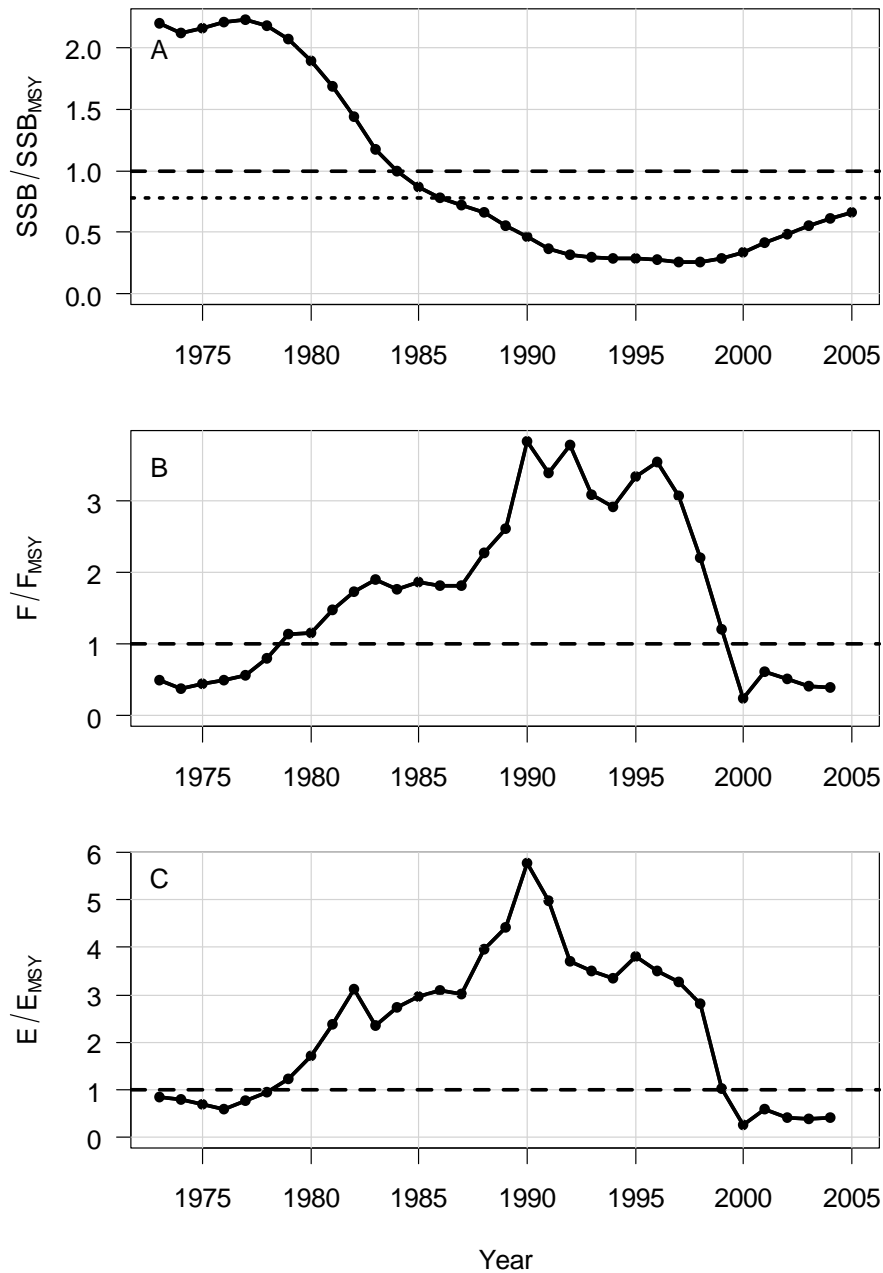


Figure 8 – Red porgy. Comparison of results from the catch-at-age model (ASM, circles) and production model (ASPIC, triangles). A)  $B$  relative to  $B_{MSY}$  and B)  $F$  relative to  $F_{MSY}$ .

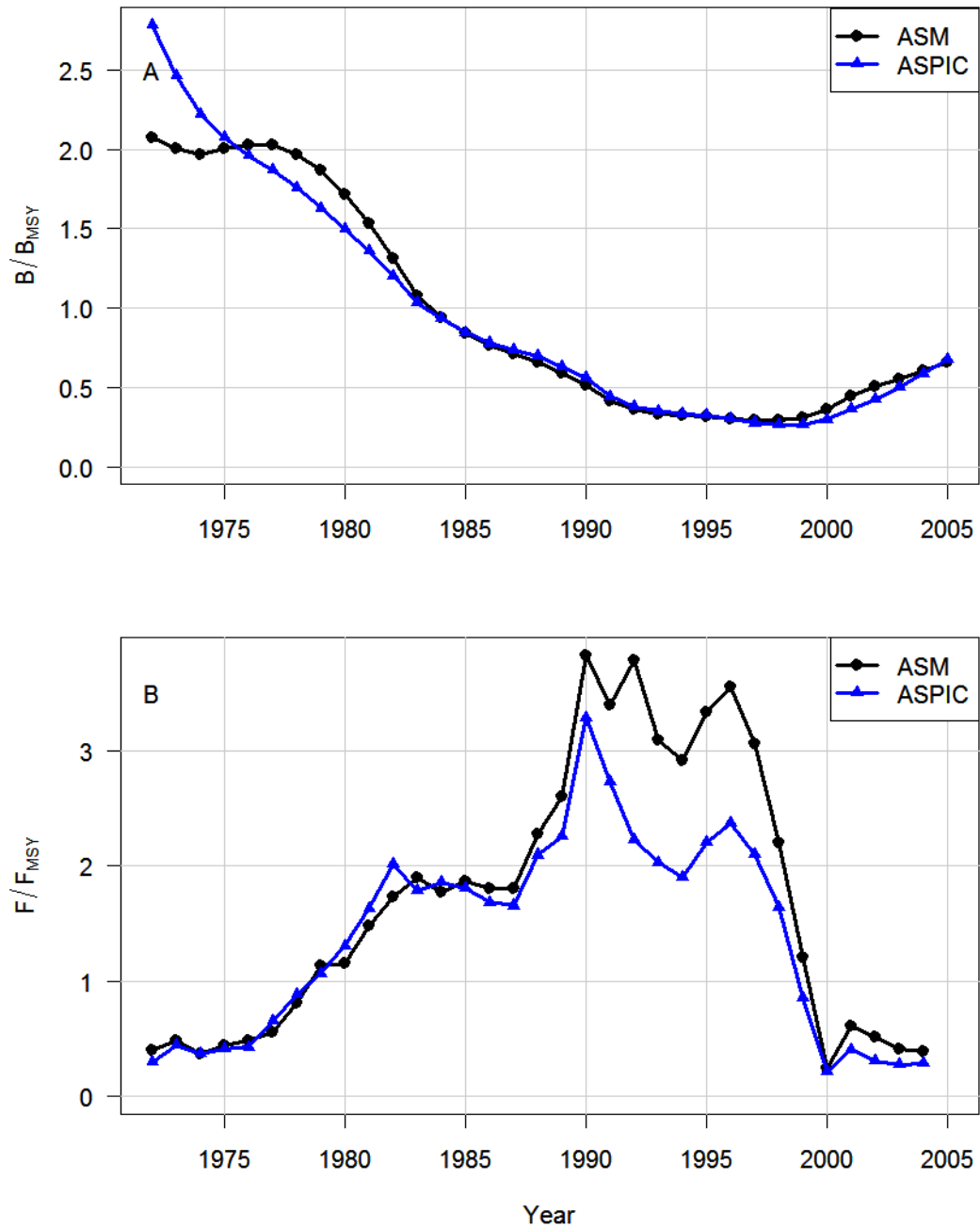


Figure 9 – Estimated time series of red porgy recruitment. A) Number of recruits; dashed line at  $R\text{-}\hat{m}_{sy} = 2.248 \times 10^6$ . B) Log of recruitment residuals; dashed line at zero, the value indicating no deviation from the estimated stock-recruitment curve.

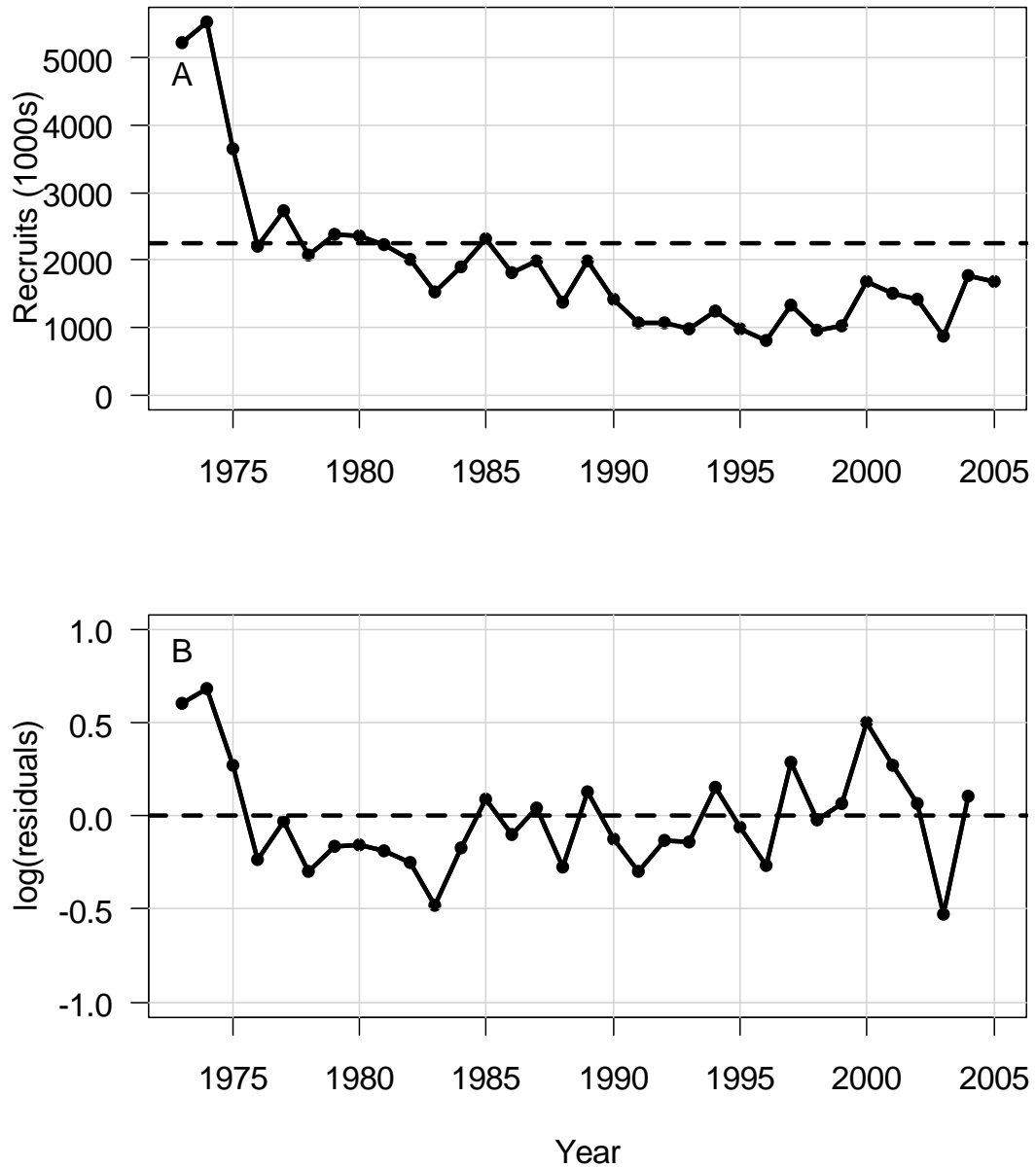
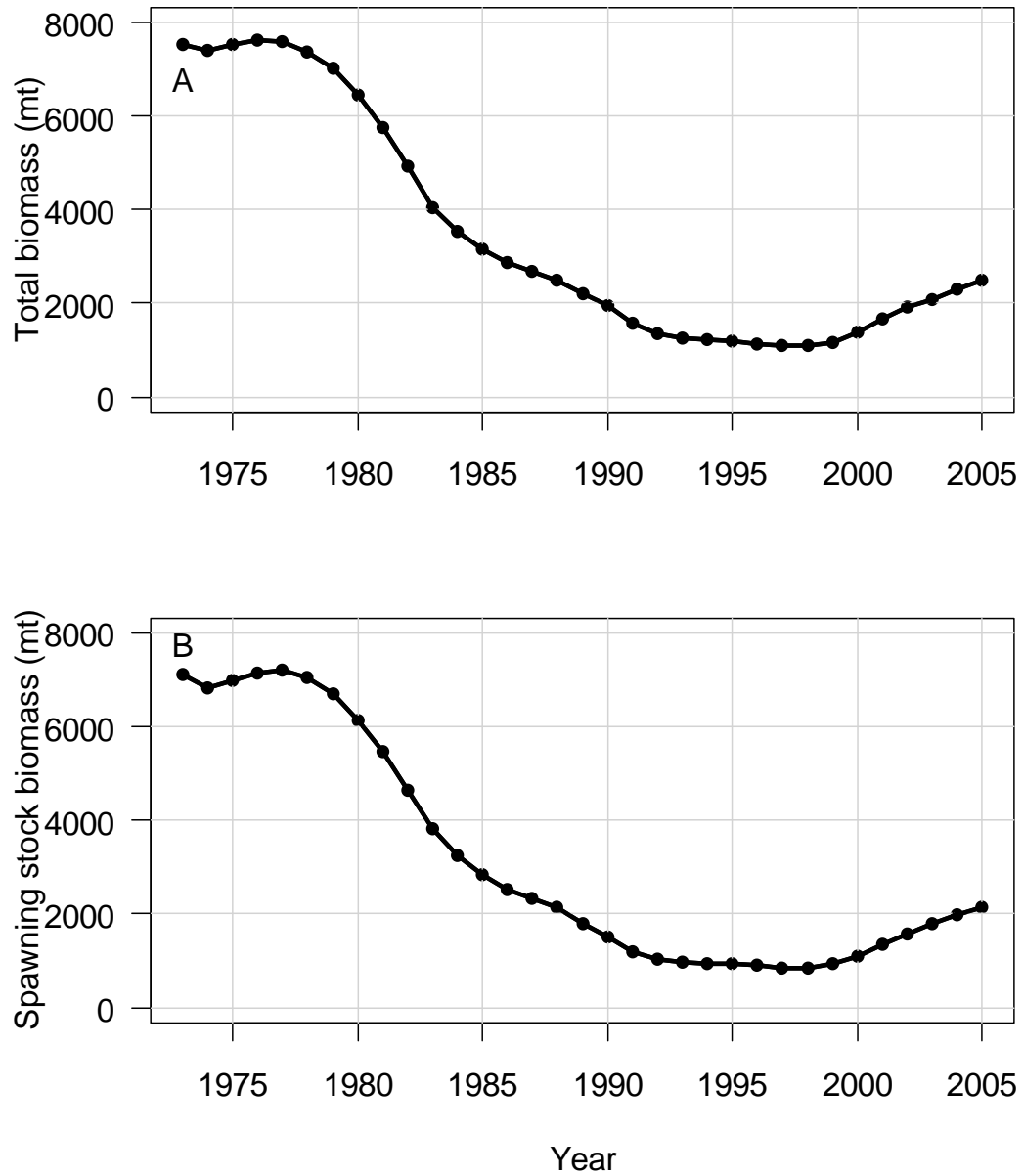
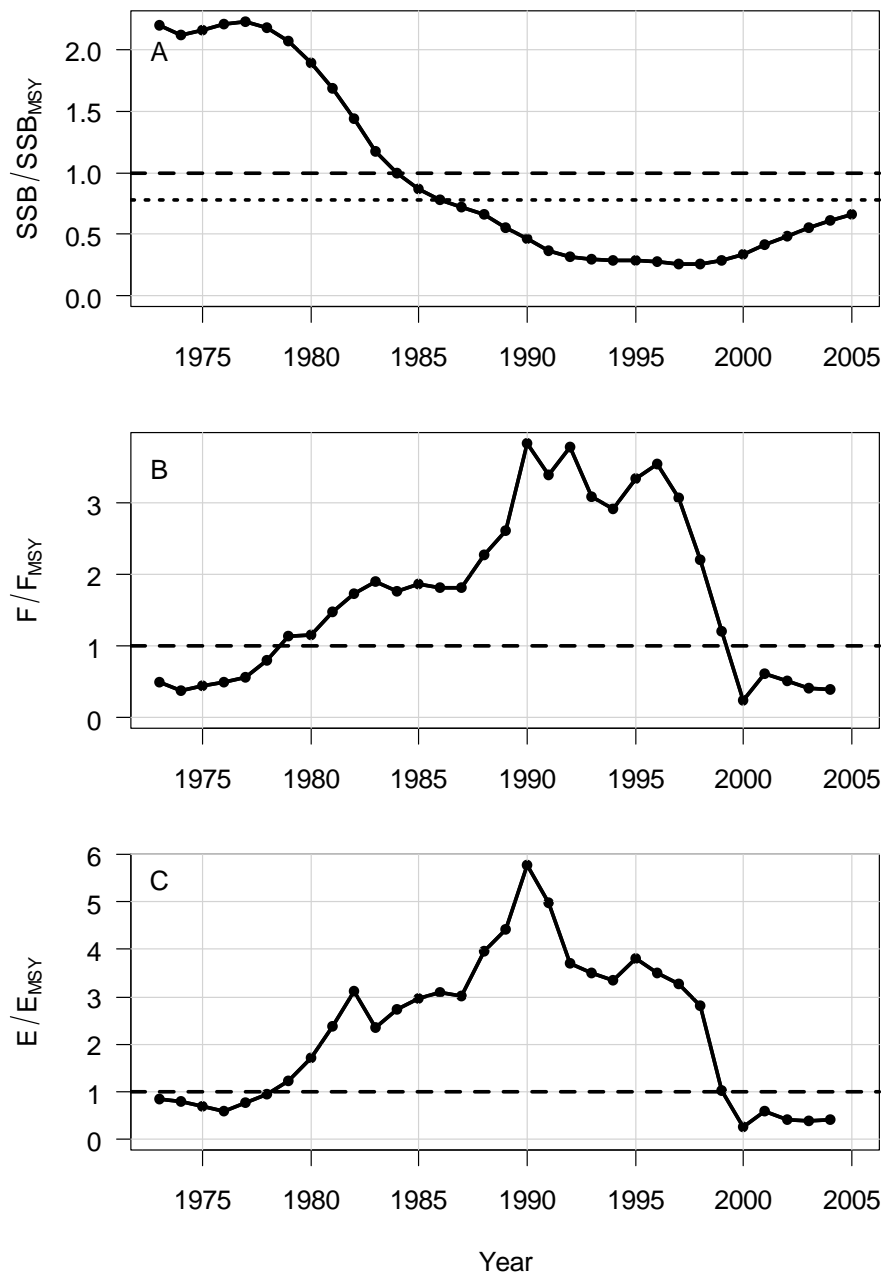




Figure 10 – Estimated biomass of red porgy. A) Total biomass and B) Spawning stock biomass (mature male and female fish biomass).





# SSC Responses to Items Identified in the SSC Roadmap

December 3-5, 2006

1. Gag - Review of the Gag Stock Assessment is postponed until the June 2007 SSC meeting.

2. Snapper Grouper Amendment 14 (MPAs)

- 1) Review the Delphi model that will be presented by Dr. Larry Perruso and the Alternative Methods for Amendment 14 Impact Analysis prepared by staff and determine which would be the best method for defining Amendment 14 impacts.

*The SSC agreed that the Delphi approach is valuable for the problem at hand albeit with some qualifications. First, there should be an assessment of the variability of panel responses and an understanding of the extent to which there are patterned differences (e.g., based on a panel member's background) in responses. Some methods were recommended for addressing these issues and there was general agreement that these should be added to the final analysis. Second, there should be an attempt to triangulate or cross check the Delphi results with results from an analysis of the logbook data. This will potentially provide a reliability check and method for identifying potential problem areas where they exist. However, it should be noted that an analysis of the logbook data, unlike the Delphi analysis, is limited in scope and therefore cannot be used to understand the whole range of potential social and economic impacts. Finally, although there was general consensus on the value of the Delphi approach, the SSC did recommend a cautionary approach to its application. Information and analysis gained from the Delphi and logbook analysis should be included in the social and economic impact assessments in Amendment 14. Further, the SSC socioeconomic subcommittee should have the opportunity to review the socioeconomic section for at least a two week period prior to a meeting of SSC members via conference call.*

- 2) Review the information provided in Attachment 1b and the language currently in Amendment 14 (contained in Attachment 1a) to determine which provides the best estimates of bycatch of snapper grouper complex species in the shark long line fishery.

*The SSC Biological subcommittee compared the methods used by Siegfried et al. with those in Amendment 14. Siegfried et al. used the delta method to calculate the catch rate of long line sets and then expanded those estimates to the South Atlantic effort adjusted for the area of MPAs and for the proportion of the sets that were in the MPAs. The method in Amendment 14 used the average per set and then since 65% of the shark long line effort was in the South Atlantic, they expanded the estimates by 65% of the total shark effort; the committee thought that the expansion was inappropriate because it ignored the underlying spatial heterogeneity. The subcommittee approved of the approach taken by Siegfried et al. but had a few questions. Did they overcorrect by using the proportion of the long line sets that were in the MPAs in addition to the ratio of the MPA area to grid area? The basic sampling unit was the long line set and their universe was the total number of long line sets per grid and year. Therefore, accounting for the area of the MPA to the grid area should be adequate considering the small sample size of observer long line sets that were actually in the proposed MPA sites. Another question was whether they considered month as a classification variable in their analyses to*

*account for seasonal variation in catch rates. The subcommittee also had some editorial comments about their method section. The subcommittee thought that the foregone shark landings should be estimated in the same manner. If more observer data become available, higher resolution estimates could be obtained by restricting the analyses to the depth ranges of the MPAs.*

### **3. Snapper Grouper Amendment 15 (Rebuilding programs, etc.)**

The specific items to be addressed by the SSC are included (but not limited to) below. Please note that when a section is identified, that is where the alternatives are outlined. The actual effects of those alternatives are included in Section 4.

#### **1) Review Estimates of Discards (Appendix F; page 427)**

The SSC noted that the rebuilding projections for snowy grouper, black sea bass, and red porgy did not include all of the sources of mortality, such as post quota bycatch mortality, nor the effects of minimum size changes to vermilion snapper and black sea bass. The Amendment 15 Team has estimated discards for these species and the methodology and assumptions are included in the amendment. Three new actions have been added to the amendment that include rebuilding strategies that incorporate estimates of dead discards resulting from management measures in Amendment 13C. The alternatives are outlined on pages 55, 56, and 57 for snowy grouper, black sea bass, and red porgy respectively. Are the assumptions and methodology for estimating discards appropriate, and estimates of discards realistic?

*The SSC interpreted “appropriate” to mean “best available science” and “realistic” to mean “based on best available data”.*

*The methodology in Amendment 15 for estimating discards for snowy grouper, red porgy, and black sea bass is based on the best available science. Unfortunately, this is a highly uncertain type of science, but is the best available at this time. Much like statistical time series analysis, the methods are largely based on recently observed fishery characteristics. The methods assume these characteristics, including species co-occurrences and aspects of fisher behavior, will continue into the future. It is likely these characteristics will change after implementation of Amendment 13C. The difficulty is that the direction of these changes is largely unknown. Since it would be erroneous to assume discard levels will be zero, the methodology used in Amendment 15 is the best available at this time.*

*In Amendment 15 three scenarios for computing discards are presented for each species. The BSC discussed whether to go forward with all three scenarios or just a single scenario. The recommendation from the Biological Sub-Committee (BSC) is to go forward with one scenario for use in management, but report the values for the other scenarios for informational purposes. The BSC examined each of these scenarios and our conclusions are as follows:*

*For snowy grouper there are three potential discard scenarios, which are contingent on the behavioral response of longline fishermen to Amendment 13C regulations. The appendix makes a “most likely” behavioral assumption and then attempts to bound the most likely scenario from above and below. The proposed analysis assumes that 50% of longline fishermen will continue to fish after implementation of Amendments 13C and 15 (scenario 1). The two alternative scenarios are that (1) all longline fishermen will stop fishing (scenario 2), or that (2) all longline fishermen will continue fishing and behave as they did prior to the*

*implementation of Amendment 13C (scenario 3). The SSC feels that the two alternative scenarios are unrealistic and should be dropped from the analysis. Instead, we recommend that the analysis focus on 25% and 75% changes in fishing behavior. These will give more realistic estimates of the potential changes in bycatch due to the Amendments*

*Amendment 13C allows an increase in red porgy catch. Scenario 1 assumes the management changes in Amendment 13C will not result in any increase in effort and is therefore viewed as an unlikely scenario. Scenarios 2 and 3 assume an increase in recreational and commercial effort. The red porgy discard analysis uses data from 2001-2005. Because this is a period of increased regulation, these data may not support the necessary analysis. The SSC recommends that data from the 1995-1998 period be used in order to provide baseline data from a period that more closely reflects the conditions under which Amendment 15 is implemented.*

*Amendment 13C increases the bag limit for black sea bass. Appendix F assumes that discard mortality is 15%, based on the results of SEDAR 2, and the sensitivity analysis is conducted for 20% and 25% discard rates. The SSC recommends that the analysis be conducted with alternative scenarios of 10% and 20% discard mortality rates in order to bracket the most likely scenario.*

- 2) Review Snowy Grouper Socioeconomic Analysis as it applies to Amendment 15 (Appendix G; page 494)

The Council, at their September 2006 meeting, voted to add the section in Amendment 13C addressing snowy grouper into Amendment 15 for reanalysis. The Council is asking the SSC to look at the language and make comments/recommendations relative to any necessary changes as they would apply to Amendment 15.

*The SSC recommends that the time horizon in the long run simulation model be limited to 10 years (year 2017) for all species due to (1) increasing uncertainty in biological stock assessment projections over time, (2) the decreasing present value of economic impacts over time due to financial discounting, and (3) the lack of information on potential target species switching and vessel entry/exit behavior in response to regulatory changes.*

*The SSC notes that the number of combinations of management alternatives across management actions is very large, and modeling the impacts of all combinations is not feasible. A reasonable modeling approach is to compare alternatives within one action while holding alternatives in other actions at their status quo levels.*

*The SSC notes that the language in line 17122 of page 527 of Appendix G that reads “Alternative 2 and the Council’s Preferred Alternative 3 would not have a disproportionately negative affect (sic) on fishermen from North Carolina and Florida” conflicts with discussion of differential impacts across states in succeeding paragraphs. The SSC recommends that line 17122 be replaced with language such as “Some of the differential effects across states of Alternative 2 and the Council’s Preferred Alternative 3 are discussed below.” Other factors that differ across states and cause differential management impacts across states include, for example, alternative employment opportunities, loss of marine infrastructure, and access to*

***markets. Although the economic simulation model cannot address these factors, the committee recommends that the Amendment include qualitative discussion of these issues. In addition, the subcommittee recommends that summary results similar to those presented in Table 4-7e should be estimated and presented for each state separately to better convey differential effects across states.***

3) Snowy Grouper Projections (Section 2.1.1.3; page 31)

There is an issue with the snowy grouper rebuilding projections that affects the overall timing of the amendment. The snowy grouper projections currently include landings through 2005. However, landings for 2004 and 2005 were estimated from 2001- 2003 landings. The Council is looking for guidance from the SSC on whether or not to incorporate recent years (2004-2006) into the projections, particularly since the commercial landings for 2006 have exceeded the commercial quota specified in Amendment 13C and the first year of the rebuilding projections contained in Amendment 15.

Possible alternatives are to: 1) retain the current projections and develop the economic model based upon those projections; 2) incorporate 2004 and 2005 landings into the projections; or 3) wait for 2006 landings to be finalized (early March) and incorporate actual 2005 and 2006 landings into the projections. Provide guidance to the Council on the most appropriate way to proceed in terms of the use of best available science in the amendment.

***Snowy grouper projections (Section 3.3)***

***The council asked for guidance on whether to replace the 2004 and 2005 landings with the actual landings rather than use those in Amendment 15, which were based on the 2001-2003 landings. Another option was to wait until later in 2007 and update the landings through 2006. Council staff had noted that landings in 2004 and 2005 were less than forecasted but higher in 2006. Since Amendment 13C was only implemented on October 23, 2006, the more recent landings would not provide any evaluation of the Amendment 13C measures. Therefore, the SSC recommends staying with the current projections.***

4) New Actions/Sections in the Amendment

Since the SSC's review of the amendment at their June 2006 meeting, new actions have been added to the Amendment. The SSC should review for range of alternatives and whether the alternatives adequately address the purpose and need. The newly added actions include:

a) Adjust Rebuilding Strategies to Account for Bycatch (Sections 2.1.10-2.1.10.3; pages 55-57)

As discussed above, the SSC recommended the consideration of discards into the rebuilding strategies. Actions have been added for snowy grouper, black sea bass, and red porgy. The methodology used to estimate the discards is included in Appendix F.

***The methodology used to estimate the discards in Appendix F has been deemed the best available science by the SSC. Alternative 2 for each section, 2.1.10.1 through 2.1.10.3 of Amendment 15, for Snowy Grouper, Red Porgy, and Black Sea Bass, take into consideration***

***discards and are recommended as the preferred alternative, using the Council's preferred Rebuilding Strategy (Alternative 4b, Modified Constant F Strategy, pages 33-35, Amendment 15) to revise TACs downward to address discards.***

b) Reduce Bycatch of Deep Water Snappers and Groupers (Section 2.1.3; page 37)

The Council is currently considering actions in Amendment 15 that would reduce regulatory discards of deep water snapper and grouper. This includes removing the queen snapper and silk snapper size limits and one vessel limit of speckled hind and warsaw grouper and implementing an aggregate quota(s) and trip limits for species in a deep water snapper grouper complex. The intention is to eliminate fishing activities to the extent possible once aggregate quotas are met. The third table in Section 2.1.3.2 of the amendment outlines the specifics of this action. This approach has been adopted in the Gulf of Mexico EEZ for shallow water groupers.

***Alternative 2, sub-alternative 2a of Amendment 15, Section 2.1.3.1, Reduce Bycatch of Deep Water Snapper and Groupers, and Alternative 2 of Amendment 15, Section 2.1.3.2, Management Measures, are the preferred alternatives, in combination, for the SSC, with the following provisions:***

***Speckled hind and Warsaw grouper bag limits be retained (status quo). Removing the bag limits has the potential to increase mortality for these species.***

***Quota limits, presented on page 191, Table 4-ax, Amendment 15, are recalculated as needed with consideration of the previous recommendation of Alternative 2 for snowy grouper, red porgy, and black sea bass of Amendment 15, Section 2.1.10, Adjust Rebuilding Strategies to Account for Bycatch***

***Trip limits for snowy grouper, golden tilefish, and non-indicator species as specified on page 191, Table 4-bx, Amendment 15, be put in place of the aggregate trip limit for the entire unit.***

c) Sea Turtle and Smalltooth Sawfish Incidental Take Impact Minimization Measures (Section 2.1.11; page 58)

NMFS, in cooperation with the SAFMC, is required to implement sea turtle bycatch release equipment requirements and sea turtle and smalltooth sawfish handling protocols and/or guidelines in the permitted commercial and for-hire snapper grouper fishery. The equipment, protocol, and guidelines would help minimize the impacts on sea turtles and smalltooth sawfish resulting from incidental take in the snapper grouper fishery. The equipment required per alternative is outlined in the table on page 60. The Council has not chosen a preferred alternative.

***The SSC's opinion on the Sea Turtle and Smalltooth Sawfish Incidental Take Impact Minimization Measures is that as long as the survival of each aforementioned species is enhanced, the committee has no specific recommendation or opinion on the matter.***

d) Bycatch Practicability Analysis (Section 4.16; page 297)

50 CFR §600.350(d)(3)(i) outlines ten factors that should be considered in determining whether a management measure minimizes bycatch or bycatch mortality to the extent practicable. The Amendment 15

Team has developed a Bycatch Practicability Analysis that analyzes the effects of the actions in the amendment on these ten factors. Is the Bycatch Practicability Analysis based upon the best available science?

***It is the SSC's opinion that the bycatch practicability analyses are based on the best available science.***

e) Monitor and Assess Bycatch in the Snapper Grouper Fishery (Section 4.16; page 297)

The first step in reducing and minimizing bycatch is to characterize the magnitude and species composition of animals that are discarded. The U.S. Congress established Section 303(a)(11) of the Magnuson-Stevens Act, which states that any FMP prepared by any Council, or by the Secretary of Commerce, with respect to any fishery, shall “establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery....” To support this mandate, the National Standard Guidelines call for development of a database for each fishery to house bycatch and bycatch mortality information (63 FR 24212). The Council is seeking to implement a long-term, standardized monitoring and assessment program as part of this snapper grouper amendment through this action.

***The SSC recommends alternative 2 (preferred) to monitor and assess bycatch. Where Alternative 2 (preferred) is stated as: Adopt the Atlantic Coastal Cooperative Statistics Program (ACCSP) Release, Discard and Protected Species Module as the preferred methodology. Until this module is fully funded, require the use of a variety of sources to assess and monitor bycatch including: observer coverage on vessels; logbooks; electronic logbook; video monitoring; MRFSS; state cooperation; and grant funded projects. After the ACCSP Bycatch Module is implemented, continue the use of technologies to augment and verify observer data. As each of the technological techniques has strengths and weaknesses in data collection, the SSC recommends that the Council evaluate at-sea needs, develop goals and objectives for data, and develop a comprehensive electronic data acquisition (EDA) program to best collect data in support of the goals and objectives.***

5) Economic Model

Dr. Jim Waters will be briefing the SSC Socioeconomic Subcommittee on the economic model being used to analyze the effects of the actions in Amendment 15 and will present preliminary results.

***The only analyses that had been completed were done using the models for 13c, the first three years using the step down quotas. The SSC made suggestions on analyses he should also consider and which ones he should consider dropping. For example, for snowy groupers, it was suggested that he not run the models assuming all fishermen would stop fishing once the trip limit was reached, or that all fishermen would continue fishing once the trip limit was met. The third alternative was that 50% would continue fishing and 50% would stop. The SSC suggested Dr. Waters run two additional models assuming 25% and 75% would continue fishing, which were seemingly more realistic scenarios. The SSC did acknowledge the current time constraints on him, seeing as Dr. Waters is supposed to have the work completed for the March Council Meeting. The SSC expects to see the results of his economic modeling work at the June 2007 meeting.***



#### 4. National MPA Framework

- 1) Review the draft National MPA Framework document (Attachment 4) and develop recommendations for the Council's comments to NMFS on the document.

*Our remarks address the general tenor of the total document and not small points or rhetoric or style. The SAFMC SSC is greatly troubled by this initiative. We regularly review data and stock assessments that are inadequate for the task of providing the managers with analyses that result in lowering the level of uncertainty. Fishery management plans have research needs detailed in them that remain unfulfilled, and in many cases, apparently will remain so. These unavailable data are exactly what is required to justify the creation of an MPA and assessment of its stated objectives. We see no advantage to creation of the national network until the agency addresses the current needs of its units with existing responsibilities.*

*We find the draft puzzling for several reasons. First, the document alleges to provide guidance for collaborative efforts to develop an interactive network system from existing sites, enhance coordination and stewardship and identify ecosystem-based gaps in protection for possible future action by governmental MPA programs. However, what is provided in the document is the creation of an administrative structure that is redundant with existing federal and state and tribal organizations. It will contribute no new information but rather will demand information from other entities that will require them to commit staff and research efforts without providing them with the financial resources necessary to fulfill those requests. It will create an organization that would probably compete with existing entities for limited financial resources in NOAA. Specifically and ironically, when you examine the items listed in item 2 on page 26 "Identify and Support Priorities for Enhancing Stewardship and Coordination" and Enhancing MPA Stewardship on page 27, the list is replete with items that are mandated in existing legislation and currently in place for existing units. Unfortunately, the existing level of activity and results by those units is not due to a lack of understanding of the problems or the will to address them, but rather it is due to a lack of financial resources.*

*Paragraph 2 on page 2 is an apparent disclaimer and acknowledgement of the existing roles and responsibilities of agencies, states and tribes. If that is truly recognized, then why is it necessary to create an administrative unit that will have not have authority or responsibility? Indeed, it appears that their framework will absolve themselves of such roles. The Comprehensive Themes state on page 4 (Natural Heritage, Cultural Heritage and Sustainable Production) are clearly objectives that have been operational in the activities of the South Atlantic Fishery Management Council for more than a decade.*

*The "Guiding Principles" (pages 4-5) are nice rhetoric but do not provide any guidance on the basic issues of the creation and management of MPAs. There is little in the document on lessons learned from existing MPAs and models for alternative situations. The draft appears to be a promotional piece and it is questionable whether it justifies the time and effort that has gone into its production.*

*On page 8 paragraph 3, the document refers to NMFS programs and uses terms that are not used in the regional fishery management councils MPAs. This appears inconsistent and is counter productive after earlier stating the need for clarification and definition of terms. It is puzzling why in the last sentence the draft states that NMFS intends to consult with councils*

*in the implementation of the Framework whereas in the next paragraph referencing the interaction with NERRS, the NERRS system will require close consultation etc. We think there is a substantive difference between “intends” and “require” in interpretation and usage.*

*In the first paragraph on page 11 under the “Seamless Network” heading, there is a reference to a cooperative enforcement agreement among several agencies and the statement “these agreements will ultimately contribute to several important elements of the National system, such as the identification of science and stewardship priorities for enhancing MAS effectiveness. It is obscure as to how the Draft makes the leap from a statement on enforcement, which is one of the few areas in the Draft that even acknowledge that enforcement is perhaps the most critical issue that must be addressed in the management of MPAs to identification of science and stewardship priorities.*

*It is unclear why the draft introduces the term Marine Managed Areas on page 13, which is confusing. There is a brief statement on the introduction in the middle of the draft on the use of the term Marine Management Areas (MMA) which is confusing after the use of the term MPA in the title and all the material in the text to this point. It appears from a reading of the literature that many organizations have used MPA as the generic umbrella term and that MMAs, as described in the first paragraph of page 13 are a type of MPA. This entire section is meaningful to a narrow group, albeit well intentioned, but apparently lacking in an understanding of how the greater public is skeptical of MPAs and such rhetoric as appears in the draft does not enhance the perception of the MPAs as management tools for marine resources. As an example, the data used to generate the figures on page 14 and referring the MMAs, appears to be very similar to the data on numbers on page iv referring to MPAs.*

*The Rationale for the National System (B on page 15) is troubling. The preceding pages of the Draft propose the creation of the MMAs to accomplish a number of objectives (conservation, increase in biodiversity etc). However paragraph two states unequivocally that “the cumulative effectiveness of the existing suite of MPAs in contributing to the long term sustainability of marine resources, habitats and ecosystems, and the services and values they provide is largely unproven”. That statement is precisely the objection received to most proposals to create any single MPA. This is most troubling, as it is not consistent with the current literature. In addition, it goes counter to all the rhetoric presented by NOAA in the past, which is well documented in all of the administrative record, on the justifications for the existing MPAs such as the Stellwagen Bank and the Florida Keys National Marine Sanctuaries.*

*We suggest that there are existing forums and organizations that can fulfill the MPA national coordination role without development of a new administrative structure.*

## **5. Oculina Evaluation Report**

- 1) Review the Oculina Evaluation report (Attachment 5) and develop recommendations on changing the size and/or configuration of the Oculina closed area.

*The SSC fully supports the recommendations made in the Oculina Evaluation Report. We also believe that public support is critical to the success of the OECA. Users are getting*

*accustomed to it, and would likely be confused by changes. The SSC recommends that no changes be made to the current size and/or configuration of the OECA.*

**SSC ORAL AND WRITTEN RECOMMENDATIONS ON THE ABOVE FIVE ITEMS ARE TO BE PRESENTED TO SNAPPER GROUPER COMMITTEE ON TUESDAY AT 8:30 A.M.**

**6. Mackerel Amendment 18**

- 1) Review Mackerel Amendment 18 (Attachment 6) and develop recommendations as appropriate.

*The SSC recommends the preferred alternatives for all three action items.*

*The SSC was uncomfortable using data from SEDAR 5, an assessment rejected by the SSC, as the data source and justification for adjusting the TAC. However, as the new TAC was calculated using a mixing ratio of 50:50, the committee considered that one of the major issues used to reject the SEDAR 5 assessment had been addressed (to the extent practicable). The SSC feels that there is likely to be little socioeconomic impact from Actions 1 and 2 because in recent years the catches of King and Spanish mackerels has been below or close to the levels in the revised TACs. Action 3, which is to apply the trip limit of 3500 pounds beginning March 1, is in response to the changing the season from April 1 to March 1. This is seen as reasonable and is unlikely to create significant socioeconomic impacts.*

*Among the concerns addressed by this Amendment is that there may be more activity in these fisheries as greater restrictions are placed in the Snapper/Grouper fisheries. Taking these actions at this time can help to prevent the fishery from experiencing overfishing or becoming overfished. The SSC has requested that the cumulative effects section include a table showing the numbers of fishermen who have a SA Snapper/Grouper Permit, those with a SA Mackerel Permit, and those who have both permits.*

**7. Mackerel Amendment 19**

- 1) Review the update of King mackerel projections for the Gulf of Mexico and South Atlantic stocks based on results presented at SEDAR 5 (Attachment 7) and develop recommendations as appropriate.

In response to a request from the SAFMC and GMFMC joint SSC subcommittee, projections of stock trends were carried out for the Gulf and Atlantic King mackerel stocks with updated catches assuming different levels of mixing between stocks. The methods used followed those described in the sensitivity to mixing assumptions section of Ortiz (2004) except that the catches for the fishing seasons 2002/2003 through 2005/2006 were updated. The updates of directed catch by fishing year within the mixing area (Florida east coast for recreational catch, MRFSS and Headboat; and Monroe to Volusia counties for commercial catch) were allocated according to fixed percentages for each stock.

*In the absence of any data, no recommendations were made.*

**8. Fishery Ecosystem Plan and Comprehensive Amendment**

- 1) Review draft documents and provide input as appropriate (Attachment 8).

*The SSC concurs with the management measures listed for the FEP Comprehensive Amendment in a move toward ecosystem-based fishery management. However, the SSC believes that these measures are integral components of fishery management plans, should be part of the management plans, and that listing them as actions for the FEP Comprehensive Amendment adds nothing beyond existing management platforms.*

*The SSC notes that the FEP will “describe,” “define,” “develop,” “calculate,” “characterize,” and “make recommendations” for a number of important issues. However, the FEP does not have any mechanism to evaluate the progress toward or success of ecosystem-based fishery management. The SSC recommends that the Council develop practical indicators for ecosystem-based fishery management such as: preventing and reversing overfishing; minimizing bycatch; identifying and protecting essential habitat; and maintaining species diversity and key ecological interactions. Until consensus definition of ecosystem-based fishery management is available with mechanisms for implementation, these indicators would provide practical tracking of ecosystem-based fishery management.*

*The SSC would like to comment on two specific actions#5.2.C. Logbook Modifications and #8.3 Enforcement/Data Collection. Rather than consider these actions separately, the SSC recommends a comprehensive analysis of electronic data acquisition (EDA) that combines appropriate electronic monitoring to achieve specified data goals and objectives.*

*The SSC feels that the Plan needs to ensure that specific connections between groups of people and natural systems. For example, many subsistence fishermen may be fishing on a recreational fishing license, however, they fish differently than do fishermen who fish purely for recreation. Overall, we felt the information we were provided were really not of sufficient detail to make recommendations at this point.*

## **9. Deepwater Coral Research Plan**

- 1) Review the draft Deepwater Coral Research Plan and provide input as appropriate (Attachment 9).

*The research and monitoring plan for South Atlantic Deepwater Coral Ecosystems is extremely thorough and very ambitious. However, the SSC was extremely concerned that many of these research recommendations would reduce research funding on projects that are more pressing for management of resource species. This dilution of funds should be taken into account when the council recommends research priorities to MARFIN and CRP programs from this plan. In order to reduce the expenditure on mapping DWCEs to establish new HAPCs, the SSC recommends that all waters at least 400m deep (or a depth determined to best approximate halfway down continental slope) to the seaward boundary of the EEZ be given the status of Habitat Areas of Particular Concern. There is precedence as the North Pacific Council, Pacific Council, and the New Zealand Department of Fisheries have used a similar management strategy. Benthic fisheries that are currently operating >400m of water can continue but they may not expand their operations.*

*The SSC chose the proposed alternative definition for Deepwater Coral Ecosystems of: “Deepwater coral, coral reefs, and live/hard bottom habitat in waters extending from 200 m to the seaward boundary of the EEZ.” Minor editorial and duplication problems are detailed*

*below. The SSC recommends that this research and monitoring plan be included as an appendix in the South Atlantic Coral Fishery Management Plan.*

*The group supported that human interaction (Who? What? When? Where?) with the deep water coral communities should be elucidated and evaluated. Such interaction can be through direct contact with the corals, as would be the case for fishing and diving activities. Alternatively, the interaction could be indirect, for example, through activities that introduce destructive chemicals into the coral environment, such as spills or purging bilge or other holding tanks on ships.*

*Once defined, the economic and social factors relevant to modifications in the activities can be assessed.*

**Deepwater Coral Research and Monitoring Plan for the South Atlantic Region-minor edits and duplications**

*p. 2 – line 1, “this will allow” to “this allowed”*

*p. 2 – Provide list of regional experts who are primary contributors.*

*p. 2 – first management goal: should ‘refine’ be ‘restore’? or do you mean refine locations of known DWCE areas?*

*p. 3 – first full paragraph. Topic sentence does not match last sentence unless ‘local’ (which should be changed to be more specific “south Atlantic region?”) in topic sentence does not include Florida’s Oculina banks for some reason??*

*p. 3 – “7) Southwest Florida Lithohierms—dozens of 15-m tall Lophelia lithohierms in 500 m in the Gulf of Mexico.” Is this in SAFMC’s jurisdiction??*

*p. 5 – typo on Objective 2B – DSCE to DWCE. The task under 2B needs more specifics. What kind of model and what will inputs and outputs be?*

*p. 6, What does ‘epochal’ refer to in Task 4B?*

*p. 6 – How does task 1 under 4A differ from Tasks described in 2a to determine abiotic conditions associated with DWCEs*

*p. 7 – 4C – Give example of episodic event and develop this further either here or above when first describing objective 4.*

*p. 7 – last paragraph, first sentence – Need reference instead of “ref needed” statement.*

*P. 9 - Need to know turnover rate of stable isotopes...*

*p. 10, Task under 2A, remove parenthetical statement ‘(ambitious!)’.*

*p. 11, two lines up from bottom, remove parenthetical statement '(this is very broad and vague)' and replace with a statement with a list of taxa that is prioritized.*

*p. 12, line 11, replace 'analyses (??)' with appropriate verbiage- maybe 'findings'.*

*p. 16, should question 2A be 'What is clonal genetic structure...??'*

## **10. Design and Use of Limited Access Privilege Programs**

- 1) Review the draft Design and Use of Limited Access Privilege Programs document and provide input as appropriate (Attachment 10).

*The SSC would like to have further time to review this document over the next few weeks and provide comments back to council staff. The overall first impression is that the document is too lengthy and technical for a lay audience. We also recognize that the guidelines provided by the document are not mandatory.*

## **11. SEDAR Research Report**

### **1) Prioritize Research Needs**

The Committee is asked to review SEDAR research recommendations and prioritize research needs for South Atlantic stocks. Prioritizations will provide important guidance to the Council's SEDAR Committee and the Council representatives to the SEDAR Steering Committee. A report is expected at the Council SEDAR Committee.

#### **Briefing Materials:**

- a) The guidance memo (Attachment 13) provides further details on this task, including the specific request of the SEDAR Steering Committee.
- b) The Review Consolidated Research Recommendations document (Attachment 12) is a consolidation of all SEDAR workshop research recommendations
- c) The Review Research Needs Overview (Attachment 11) provides a general overview of research needs and tabulation of research needs by categories across assessments, and highlights those needs that are common to many stocks.

The Committee is asked to review SEDAR research recommendations and prioritize research needs for South Atlantic stocks. Prioritizations will provide important guidance to the Council's SEDAR Committee and the Council representatives to the SEDAR Steering Committee. A report is expected at the Council SEDAR Committee.

*The SSC recommends that long-term research on the characterization of fishery catches and fundamental biology of core species in the fisheries be implemented to support stock assessments. Fishery-independent and -dependent data in SE are inadequate and very poor when compared to other U.S. regions. Age and growth studies, for example, have been more reactionary than long-term. The SSC sees a critical need for a long-term, continual, and reliable funding source to do sampling right; a comprehensive sampling program that is well designed and appropriate for the fisheries will be required. This will avoid piecemeal, two to three year studies with breaks in between that result in incomplete datasets. The SSC did not begin to design such a plan because funding is not identified. The SSC is concerned that re-*

*allocation of budgets within agencies (e.g., MPA initiatives) may lead to lowered funding for much needed fisheries-research. The diversity of fishes in SE leads to logistical issues not seen in other regions; in SE, sampling needs to be on whole fisheries each year and not on single species.*

*The SSC did discuss data needs that should be considered for sampling program. Trends reports (see below for SSC recommendation) can be used to assist with prioritizing data needs by species. Data needs expressed in SEDAR assessment reports included monitoring (catch, length, weight, age), assessing and dealing with age and length variance, and discard information. Since landings data are by strata, these biological data should be collected by strata. Studies are needed to determine the number of fish samples required for biological and stock assessment needs. Current funding agencies (e.g., MARFIN) only give 12 to 24 months of funding; the resulting data often are not applicable to assessments. However, research projects can provide a tool (e.g., new age and growth, or estimates of fecundity that only need to be done over a two year period) but implementation requires a different approach; the proposal requests from CRP, MARFIN, MARMAP should take into account the need for tool development.*

*As part of the discussions on the SEDAR process, it was noted that the snapper-grouper complex and coastal pelagics have many more species than can be assessed given SEDAR's current and, in all likelihood, future level of resources. At this time SEDAR, only has two levels of assessments: benchmark and updates of species that already have benchmark assessments. The idea of resurrecting a modified annual trends report to provide the councils information on the landings, effort, and catch rates. NMFS's Beaufort Laboratory used to provide these reports to the Snapper-Grouper Committee. While it is acknowledged that the trends reports are not substitutes for stock assessments, it can be viewed as an Early Warning System. The SSC was concerned that some of these species could be getting in to trouble without NMFS and the Council being aware of it. For example, the request for an update assessment for vermilion snapper was prompted, in part, by decreased landings in recent years; the trends report could quickly show whether that decline was due to decreased effort. If the catch rates were not declining then the urgency of the update would be reduced. Also because the trends report would require less effort on the part of NMFS, it would allow analysts conducting SEDAR assessments to concentrate on the higher priority stocks. NMFS should consider conducting an analysis using historical data that would enable the Council to establish a "trigger" level based upon CPUE that would move a species onto a track for collection of the data necessary to conduct an assessment. In that way, it would be possible to show that we are not ignoring all those species, but rather using severely limited resources in the most cost effective manner. In short, the SSC sees the trends report as a means of helping the Council to prioritize which species need stock assessments and would reduce the reliance on anecdotal information and best judgments.*

*The Subcommittee recommends that the trends reports begin in 2007.*

## **2) Future Assessment Priorities and Recommendations (Refer to the SEDAR Committee TAB 6, Attachments 5, 6a, 6b) and (Attachment 11)**

The SSC is asked to review data availability for South Atlantic Stocks to determine which stocks should be considered for future SEDAR assessments. The Committee is asked to classify stocks in two ways: 1)

Stocks to assess - representing those stocks which are assessment priorities and have adequate data for consideration on the SEDAR schedule; and 2) Stocks of Concern - representing those for which an assessment may be needed but not feasible in the near future due to severe data deficiencies. Comments are solicited for both stocks that are currently scheduled for assessment as well as those that do not appear on the current plan.

Committee members are asked to review data available within their state or University research and monitoring programs to 1) help ensure that the various aggregated databases (such as TIP) are complete and up-to-date, and 2) notify the SEDAR Committee of any additional databases that should be considered for future assessments.

**Briefing Materials:**

- a) The guidance memo (TAB 6, Attachment 6a) provides further details on this task, including the specific request of the SEDAR Steering Committee. It provides a summary of stocks to consider based on past assessment efforts and the NOAA Fisheries Report to Congress on stock status.
- b) The current SEDAR Schedule (TAB 6, Attachment 5 indicates stocks planned for assessment over the next 5 years.
- c) The Research and Monitoring Needs Overview (TAB 1, Attachment 11) provides a summary of available biological sampling information for those stocks scheduled to be assessed in near future SEDARs.
- d) The Supplemental Data Evaluation, Excel workbook, (TAB 6, Attachment 6b) provides a tabulation of available biological data from the TIP, MRFSS, and Headboat programs for those stocks addressed in the NOAA Fisheries Report to Congress.

The SSC is asked to review data availability for South Atlantic Stocks to determine which stocks should be considered for future SEDAR assessments. The Committee is asked to classify stocks in two ways: 1) Stocks to assess - representing those stocks which are assessment priorities and have adequate data for consideration on the SEDAR schedule; and 2) Stocks of Concern - representing those for which an assessment may be needed but not feasible in the near future due to severe data deficiencies.

*The committee did not review data availability as no documentation was provided to do this.*

**Stocks that should be assessed**

*Scamp*

*Mutton snapper*

*Black grouper*

*Triggerfish*

*Blueline tilefish*

*Cobia*

**Species of concern**

*Speckled hind*

*Warsaw*

*Yellowedge grouper*

*Goliath*

*Little tunny-data deficiency*

*Dolphinfish –data deficiency*

*Wahoo – data deficiency*



### 3) Assessment schedule review (Refer to the SEDAR Committee TAB 6, Attachment 5)

The Committee is asked to review the current SEDAR Assessment Schedule and provide guidance to the SAFMC SEDAR Committee on the following items:

- > Red Drum - Are data adequate to assess the South Atlantic Stock? Have critical research needs noted in previous assessments been addressed? Have critical data deficiencies noted in previous assessments been addressed?
- > Goliath Grouper - Are data adequate to assess Goliath Grouper? Have critical research needs noted in previous assessments been addressed? Have critical data deficiencies noted in previous assessments been addressed?

Briefing Materials:

a) Two Motions of the SEDAR Steering Committee are relevant to this task:

- > Red Drum: "The Council SSCs are requested to review red drum data and recommend whether benchmark assessments are appropriate. The South Atlantic Council will coordinate with South Atlantic states and the ASMFC. A report will be provided at the next Steering Committee meeting."
- > Goliath Grouper: "The Councils are asked to have their SSC's review available data on Goliath grouper and progress on significant research needs identified in the benchmark assessment to determine whether an update or benchmark is appropriate and recommend the timing of the next action."

The Committee is asked to review the current SEDAR Assessment Schedule and provide guidance to the SAFMC SEDAR Committee on the following items:

- Red Drum - Are data adequate to assess the South Atlantic Stock? Have critical research needs noted in previous assessments been addressed? Have critical data deficiencies noted in previous assessments been addressed?

*The SSC notes that the council has no management measures in place for red drum and has no plans for addressing management. Therefore, the SSC concludes that the Council has no immediate interest in red drum, and recommends against a red drum stock assessment. Red drum assessment done at the state and ASMFC level may have need for SEDAR review, and the SEDAR Steering Committee may insert red drum in the SEDAR schedule if its regional importance exceeds the lack of relevance for the Council.*

- Goliath Grouper - Are data adequate to assess Goliath Grouper? Have critical research needs noted in previous assessments been addressed? Have critical data deficiencies noted in previous assessments been addressed?

*The SSC felt that goliath grouper could not be assessed because data are not sufficient.*

*No update was provided detailing what (if any) additional data beyond those utilized for the most recent assessment were available for goliath grouper. Therefore, the previous*

*recommendation of the committee that the data were insufficient for an assessment is unchanged.*

**4) SEDAR 15, South Atlantic Greater Amberjack and White Grunt (Refer to the SEDAR Committee TAB 6, Attachments 7 & 8)**

The next SEDAR assessment involving South Atlantic stocks will be SEDAR 15, greater amberjack and white grunt. The SSC is requested to provide advice to the SAFMC SEDAR Committee on scheduling, terms of reference, and participants. Specific items are detailed below:

- > Review the Terms of Reference for SEDAR 15
- > Review the proposed workshop schedule for SEDAR 15
- > Suggest appropriate participants, both as SSC representatives as well as others agency employees or researchers who the SSC deems appropriate

Briefing Materials:

- a) Draft SEDAR 15 Terms of Reference (TAB 6, Attachment 7)
- b) Draft SEDAR 15 Schedule (TAB 6, Attachment 8)

The next SEDAR assessment involving South Atlantic stocks will be SEDAR 15, greater amberjack and white grunt. The SSC is requested to provide advice to the SAFMC SEDAR Committee on scheduling, terms of reference, and participants. Specific items are detailed below:

- > Review the Terms of Reference for SEDAR 15

*The SSC agrees with the Terms of Reference for these two species.*

- > Review the proposed workshop schedule for SEDAR 15

*Overall, the SEDAR process needs more time. Currently, there is no leeway to address the unforeseen. For example, if an issue arises that causes a delay, then the schedule begins to drive the process. There is a potential for a trade off in getting the job done on schedule and getting the job done right. Full participation by many participants is often hindered by the difficulty in getting the commitment from superiors to allow time away from main responsibilities.*

*Additionally, the SSC has concerns with putting resources into species that are in good shape and not addressing species that are in trouble. The SSC strongly recommends a trends report (see above) to support prioritization of species for SEDAR. Without a trends report, the SSC must rely on anecdotal information and best judgment to identify which stocks need to be assessed. The SSC desires to provide input on priorities and scheduling to the SEDAR steering committee.*

*Although the trends report will not be completed for at least a year, the SSC wanted to provide guidance to SEDAR steering committee on upcoming assessments. For this, the SSC used anecdotal information and best judgment. The SSC recommends red grouper and black grouper be assessed in SEDAR17, Spanish mackerel and red snapper in 18, and black sea bass in 22. King mackerel should be assessed before 2010 – as soon as practicable.*

*Additional issues that should be taken into account include whether or not the benchmark assessment is a first timer, which will add time to the process. The SSC felt that a “SEDAR assessment and monitoring workshop” with appropriate materials (e.g., trends report) available should take place in late Fall or early 2008 to better recommend order of assessments from 2012 onward; a report from this workshop would need to be available in June 2008 before steering committee meets to plan >2012 SEDARs. Our recommendations through SEDAR 22 will handle through 2011.*

*For white grunt and greater amberjack, the SSC agrees with the start date but recommends data review in July 2007, assessment workshop in December 2007, and assessment review July 2008. At a minimum, the review workshop for SEDAR 15 should be delayed by three months.*

- Suggest appropriate participants, both as SSC representatives as well as others agency employees or researchers who the SSC deems appropriate

*Voluntary Participants were:*

*Dr. Brian Cheuvront – Willing to attend all three workshops*

*Dr. Pat Harris – Data workshop*

*Dr. Jeff Buckel – Assessment Workshop*

## **5) Vermilion Snapper Update (Refer to the SEDAR Committee TAB 6, Attachment 9)**

The next SEDAR assessment update involving South Atlantic stocks will be vermilion snapper. The SSC is expected to provide advice to the SAFMC SEDAR Committee on terms of reference, scheduling, and participants. Because this is an update, the SSC has the additional responsibilities of providing a chair for the assessment workshop and serving as a review body.

Specific items are detailed below:

- > Review the Terms of Reference for the vermilion snapper update.
- > Recommend dates for the data scoping conference call and the assessment workshop.
- > Suggest appropriate participants, both as SSC representatives as well as others agency employees or researchers who the SSC deems appropriate.
- > Appoint SSC chair for the assessment workshop

Briefing Materials:

a) Draft Vermilion Snapper update Terms of Reference (TAB 6, Attachment 9)

b) Excerpt from the SEDAR Guidelines regarding the assessment update process:

“Once an assessment is approved through SEDAR, the basic framework of input data and model configuration may be updated in the future by adding additional years of data. It is intended that the update process should be considerably less time consuming and require less manpower than benchmark assessments. Minor modifications and changes to input data and modeling techniques may also be incorporated in updates, although in all instances a strict update, defined as only including incorporation of additional data into the previous framework, should be prepared.

The general update process is described below. Each Council is allowed latitude to develop a more detailed process to conduct assessment updates.

The SEDAR Steering Committee will approve and schedule requests for assessment updates and determine the entity which will take lead in conducting the assessment update.

The Council or Councils involved in the update assessment shall make appointments to the update workshop panel in accordance with their SEDAR appointment guidelines. The Regional Administrator and Science Center Director shall designate appropriate participants from their staff.

Oversight and review of assessment updates will be provided by each Councils' SSC. The Council's SSCs shall establish terms of reference for the update assessments and determine acceptable changes and modifications of the benchmark assessment. It is suggested that a representative of the SSC or other appropriate council committee chair the update workshop and present workshop findings to their council.

Prior to conducting an update, the SSC shall provide a written report to the Council describing the terms of the update. Following the update, the SSC shall provide a written Consensus Summary and Advisory Report to the Council detailing their review of the update. The Council shall provide copies of these reports to the SEDAR Coordinator for inclusion in the SEDAR Administrative Record. The Consensus Summary and Advisory Report should follow the same format as those prepared for SEDAR benchmark assessments.

All documentation standards of SEDAR workshops apply to assessment updates. Working papers, Assessment Reports, and the Consensus Summary and Advisory Report shall be provided to the SEDAR coordinator for inclusion in the Administrative Record and website posting."

The next SEDAR assessment update involving South Atlantic stocks will be vermilion snapper. The SSC is expected to provide advice to the SAFMC SEDAR Committee on terms of reference, scheduling, and participants. Because this is an update, the SSC has the additional responsibilities of providing a chair for the assessment workshop and serving as a review body.

Specific items are detailed below:

- > Review the Terms of Reference for the vermilion snapper update.
- > Recommend dates for the data scoping conference call and the assessment workshop.
- > Suggest appropriate participants, both as SSC representatives as well as others agency employees or researchers who the SSC deems appropriate.
- > Appoint SSC chair for the assessment workshop

*SSC recommends that SEDAR not conduct the vermilion snapper update stock assessment when scheduled because of the need to wait for regulations to take effect. The SSC also recommends that this not be an update but rather a benchmark assessment with new data and a different modeling approach.*

**SSC ORAL AND WRITTEN RECOMMENDATIONS ON ITEMS 6-11 ARE TO BE PRESENTED TO THE APPROPRIATE COMMITTEES**

**SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL**

**SCIENTIFIC AND STATISTICAL COMMITTEE**

**Doubletree Grand Key Resort  
Key West, FL**

**June 10-12, 2007**

**SUMMARY OF MOTIONS**

**Page 179: Approve this summary as our report on the gag and vermilion. Motion passed on Page 179.**

**Page 189: To move to approve the adoption of this report as the consensus of the SSC.**

**Page 190: Friendly amendment to the motion to simply edit it to approve the adoption of this report. Passed on Page 191.**

**Page 195: The SSC has reviewed the current version of Amendment 15, endorses the prepared responses for each term of reference as follows, to be sent to the South Atlantic Fisheries Management Council. Motion carried as amended on Page 199.**

**-FINAL REPORT-  
SSC Responses to Items  
Identified in the SSC Roadmap  
June 10-12, 2007**

**1. Role of the SSC** – the role of the SSC was greatly and significantly expanded by the recent changes to the Magnuson-Steven Act (**Attachment 1**). The issue of paying SSC members has been discussed by our SSC Selection Committee and is not a part of the role discussed here. Basically, Congress transferred the responsibility to set the top end of the catch level to prevent overfishing (what the Council has called Acceptable Biological Catch or ABC in mackerel management for years) from the Council to you the SSC. Big Change! Expect to have constituents show up to offer input during your meetings (see agenda item at start of all SSC meetings) and expect them to want to talk with you during breaks and evenings. At the June meeting the SSC will be expected to provide an ABC for gag and vermilion snapper that incorporates estimates of bycatch and discard mortality and to provide some guidance on where between this maximum catch level and zero the Council should set the Total Allowable Catch (TAC) to balance the socioeconomic impacts with the need to be risk averse.

The SSC will also be asked to review, revise, and approve a Research Plan.

The SSC should evaluate all Council amendments with the new MSA requirements for cumulative economic and social impacts, judge the completeness and effectiveness of bycatch reporting programs, etc.

*No specific actions items were requested of the SSC relative to this agenda item. However, a brief synopsis of our dialog on this topic follows, identifying concerns and some key elements that could affect our efficiency as an advisory group.*

*The SSC considered its current and future role and raised several issues that must be considered under the new MSA. The first item is that it is extremely difficult to move forward without guidelines from NOAA-GC. Currently it is possible to get as many interpretations of the intent of the legislation as there are readers of the act. The major issue is that under the new MSA the work load of the SSC will be increased significantly requiring more and probably longer meetings. As an example, the SAFMC anticipates NOAA's future requirements and is requesting the SSC to develop and approve ACLs for for gag grouper and vermilion snapper (Item 1 of the Road Map). The SSC is concerned about their development of ACLs without NOAA guidelines but will proceed with the process by using the existing criteria and historical practices of the SAFMC.*

*A critical part of the success of the efforts of the SSC is a function of participation and more time requirements could have a negative impact on such service. Increased SSC activities will also require additional SAFMC staff time to support this effort.*

**2. SEDAR 10 Corrected Atlantic Gag Assessment** - review and provide recommendations to the Council on the Atlantic Gag Grouper SEDAR Assessment. The South Atlantic Council has indicated that the SSC is their review body for all SEDAR Assessments. **IN ADDITION, THE**

**MAGNUSON-STEVENS ACT NOW REQUIRES THAT THE SSC PROVIDE THE COUNCIL WITH AN ALLOWABLE CATCH LEVEL THAT WILL PREVENT OVERFISHING; THIS CAN BE A RANGE OR A POINT ESTIMATE.** SSC written recommendations including an ABC are to be presented to Snapper Grouper Committee on June 12<sup>th</sup> at 8:00 AM.

The Council has provided the following SSC Terms of Reference (TOR) for the gag grouper SEDAR 10 assessment. Specific items to be provided by the SSC include but are not limited to the following:

- A. Examine the data, assessment, and review workshops' TORs and determine if each of the Terms of Reference items were met.

*TORs were met at all levels. Goodness of fit was assessed visually (Figures 27, 29, and 31) instead of through the more classic, statistical approach because of unknown degrees of freedom.*

- B. Examine the Review Panel's recommendation that, until the next assessment, the Council adopt a MSST value for gag at the lowest observed SSB (around four million pounds) in place of the current definition  $[(1-M) \cdot SSB_{MSY}]$

*SSC recommends that the  $(1-M)B_{msy}$  be used rather than the 4 million pound value suggested by the review as that value appeared to be arbitrarily chosen and had little to no scientific support for its use.*

- C. Does the absence of commercial and recreational data from the Atlantic side of the Florida Keys affect the outcome of the assessment?

*The commercial landings used the area fished or water body codes to distinguish between those landings coming from the Atlantic side of the Keys and from the Gulf side. The headboat survey has separate area codes for the captains to designate where they were fishing in the Keys. Recently, MRFSS has started using their area codes also to make this distinction but for this assessment, all of the gag landings from the Keys were assigned to the Atlantic side. Therefore, this TOR is not relevant.*

- D. Any SSC suggestions on how to have recreational and commercial data provided from the Atlantic side of the Florida Keys for inclusion in future assessments.

*The method used in this gag assessment would be appropriate for future assessments.*

- E. A table of landings in pounds by sector should be included for the Council.

*A table of pounds by sector has been attached as Table A. Assessment Table 16 has the predicted values from the assessment model and these closely match the input values.*

- F. How adequate is the assessment with the lack of age and length sampling, the lack of a fishery-independent index, and highly variable MRFSS estimates.

*Ages are used to fit a van Bertalanffy growth equation and to develop selectivities by gear and there are sufficient ages to do that; obviously more ages would be nice. The paucity of length samples in MRFSS occurred mostly prior to 1987 and only a couple of years since then so for the most part each sector has adequate (more than 50 lengths) per year. A fishery independent index especially by age would be very valuable for all assessments not just gag. The variability in MRFSS estimates are compensated by being downweighted according to that variability. There is still great concern with the quality of the MRFSS data and the need for recreational data to become equal in quality and quantity with the commercial data for stock assessments. The SSC finds the model adequate for management.*

- G. In Section 2.2, the Consensus Report states that the lack of length samples from MRFSS resulted in the use of headboat length compositions to reflect the charterboat length compositions.

*As noted in TOR F, those substitutions were mostly in the early years of MRFSS; however, anglers on charterboats retain larger fish than do those on headboats. The noticeable peak in the headboat lengths is right at the 24 inch minimum size in the years since 1999. Because charterboat landings comprised a small proportion of the overall landings and because the substitution mostly occurred in the early years, the SSC thought that this had little effect on the outcome of the assessment in 2004.*

- H. Relative to SSB, the run with the headboat CPUE data omitted shows a population increasing in recent years, reaching the highest terminal value of all the runs. Conversely, the run with the commercial handline omitted results in the lowest SSB value in the terminal year. Examine the conflicting indices of abundance. Is it reasonable to conclude, as the Review Panel did, that this highlights the balance fit between these two indices

*The Headboat index was negatively correlated to the other two indices used in the assessment, so it not surprising that omitting the downward trending index resulted in the population numbers increasing. When the commercial handline index with its' increasing trend was omitted the population decreased. Tuning indices provide guidance to the model on trends in abundance. Some researchers recommend resolving differences in the indices outside of the model so as to not send a mixed signal to the assessment. However this is difficult, without additional information on which pattern is correct. The assessment model found the solution that accommodated both indices, which is probably the balance that the Review Panel referred to. This argues for developing a fishery independent index.*



- I. Examine the increase, in recent years, of the catch of shore mode recreational sectors.

***Table 9 in the data workshop report lists the MRFSS landings by modes and there have been little to no shore mode landings in recent years let alone any increase.***

- J. The Review Panel questioned whether the ADMB statistical catch at age model conforms to the Model Acceptance Note 1 in the TOR for the assessment workshop.

***Note 1 refers to the SEDAR steering Committee requirement of models to be standard configurations such as the NMFS Toolbox or other validated sources; it strongly discourages custom programming during the assessment workshop. The core model in statistical catch-at-age models are the same, the only difference in the programs is their ability to handle the diversity of data streams that are input. The model used for gag is essentially the same model that was developed originally for cobia, enhanced for red porgy (SEDAR 1), and then used for black sea bass (SEDAR 2), snowy grouper and tilefish (SEDAR 4), and for gag (SEDAR 10). This model has been reviewed during each SEDAR assessment and found to be a satisfactory model especially considering the low levels of age sampling in the southeast.***

- K. Evaluate the Ad Hoc Review of gag and red grouper to address issues relative to the Atlantic gag assessment. Given their recommendation and that some of the sensitivity runs “blew up” the SSC should determine whether or not they believe the correction justifies further independent review by going back to the Assessment Workshop stage.

***The correction for the Atlantic gag was the removal of MRFSS discards from landings when discards were also being handled explicitly; thus discards were originally double counted. Since the correction to the landings was the only adjustment and there were no changes in the model configuration, length compositions, age compositions, nor indices, and that the Ad Hoc Review Panel reviewed the revised gag assessment, the SSC did not think that the assessment needed yet another formal review. As to the runs which “blew up”, the spikes occurred in the late 1960s and early 1970s prior to actual species information, indices, or recreational landings (Advisory Report Figures 12 and 14). All of the sensitivity runs were similar from about 1976 and later. TOR H noted that when the headboat index was omitted, the SSB had the highest value and when the commercial handline index (logbook CPUE) was omitted the SSB had the lowest value.***

- L. Review the treatment of selectivity – the recreational selectivity at changes with the implementation of the first recreational size limit of 20” TL (1/1/92) and then

the 24" TL size limit (2/24/99). Was this modeled correctly? Are these changes accounted for in the management advice? If not, what affect would they have on management advice.

*Separate recreational selectivity patterns were developed in the model for three time periods: 1962-1991, 1992-1998, 1999-2004 which match the minimum size regulations (Figure 47). The patterns followed a logistic pattern that was appropriate especially considering the size of gag caught by the charterboat sector. Therefore, the model did account for the changes in minimum size correctly and the fishing mortalities by sector incorporated these differences.*

- M. How were discards estimated and modeled? How are discards estimated for the future? What exactly is included for discards in the estimated management values from the model?

*MRFSS estimates discards directly because samplers ask anglers whether they released any fish alive. In 2005, headboat began estimating discards but for prior years, the data workshop used the ratio of kept fish to released alive fish from MRFSS was applied to headboat landings. Beginning in 2001, a proportion of the reef fish logbooks were asked to supply information on their discards. The proportion of discards to landings by sector was used to estimate historical trends. In projections and in determination of benchmarks, discards are treated as additional gears and thus are accounted for in the management advice.*

- N. The magnitude of MSY and SSB<sub>msy</sub> changed substantially in the corrected assessment; status determinations did not change much. Does this seem correct?

*The correction involved reducing landings because the MRFSS discards were included twice in the original assessment and landings primarily scale the population size so the biomass measures like MSY or SSB<sub>msy</sub> would be expected to decrease while the fishing mortality rate or the ratios depends more on the relative amounts and would not be expected change as much. Therefore, the results are consistent with what would be expected.*

- O. Some of the sensitivity runs "blew up" in the corrected assessment. What are the implications of this change? See comment in K

*This was noted in TOR K in that the runs that blew up in the late 1960s and early 1970s were those with age comps and the logbook cpue index that began in 1992. Commercial grouper landings were not reported by species until 1986, recreational landings were not estimated back then, and there were no age or length data from that time. The historical landings were primarily used to indicate levels of removals in order to try to estimate unfished states but the details have low precision. The results in recent years have the full suite of data and indices and because they fit the data well the results are useful.*

P. Is the stock undergoing overfishing?

*The stock is undergoing overfishing as of 2004 with the  $F_{2004}/F_{MSY}$  ratio of 1.31 using the constant catchability configuration.*

Q. Is the stock overfished?

*Based on the results of assessment, the  $SSB_{2005}/MSST$  ratio was 1.10 using the constant catchability configuration and, thus, the stock was not deemed to be overfished at the beginning of 2005.*

R. Is the stock approaching an overfished status?

*The trajectory of SSB (Figure 83) shows an upturn after 1999 that corresponds to the implementation of the 24 inch minimum size. Similarly, the fishing mortality trajectory has been decreasing since 1992 (Figure 85). However, recruitment in the last three years has been lower and these fish are just entering the fishery and the fishing mortality rate was above  $F_{MSY}$  such that the stock could become overfished. The model projections show the stock becoming overfished in 2007 (Figure 95).*

S. Provide an estimate of  $MSY$ .

*Yield at 75%  $F_{msy}$  is the value the Council has agreed to for ABC which equals an equilibrium value of 1,217,000 lbs. However, the landings upon implementation are expected to be 694,000 lbs.*

T. Provide an Allowable Biological Catch Level to prevent overfishing using or not using the 2% increase in efficiency per year. This catch level must include discards. This can be viewed as a 2-part process with the Biological Sub-Committee taking the lead on developing the ABC and the Socioeconomic Committee taking the lead on providing guidance to the Council on where between ABC and 0 the TAC should be set based on balancing the socioeconomic impacts and the need to be risk averse.

*Erik Williams, with NOAA Beaufort, presented a potential methodology for establishing probability based values for ACLs. The methods paper being developed by Dr. Williams and his colleagues used the south Atlantic gag as its working example. The SSC did not feel comfortable proceeding with the development of ACLs as not all scenarios were available for review. The SSC requested an Ad hoc meeting be held so that further detail could be obtained for review during the December meeting.*

**3. Vermilion Snapper Update (SEDAR 2) - review and provide recommendations to the Council on the Vermilion Snapper SEDAR Update. The SSC is the review body for SEDAR Assessment Updates and is the group to write the Review Report and the Advisory Report (please follow the reports included for gag in the SEDAR 10**

documents). **THE MAGNUSON-STEVENSON ACT NOW REQUIRES THAT THE SSC PROVIDE THE COUNCIL WITH AN ALLOWABLE CATCH LEVEL THAT WILL PREVENT OVERFISHING; THIS CAN BE A RANGE OR A POINT ESTIMATE.** SSC written recommendations in the form of the Review Report and the Advisory Report presented to Snapper Grouper Committee on June 12<sup>th</sup> at 8:00 AM.

Items to be provided by the SSC include but are not limited to the following:

- A. Examine the Assessment Update and determine if each of the Terms of Reference items (**Attachment 3**) were met.

*The update followed the guidelines established through the terms of reference and is based on the best available science.*

- B. Is there a table with commercial and recreational landings and discards in pounds?

*The report contains tables for both the commercial and recreational landings that have pounds identified. Discards are accounted for in the landings and as such are not broken out separately from the landings.*

- C. Are the updates to earlier catch data sufficient to affect the outcome of the stock assessment. If so, provide a recommendation to the Council on how to proceed (e.g., request the update be redone before the SSC can develop an ABC).

*The updates to the data stream did add useable information. The SSC does not recommend the update be redone; however, the group endorses moving the benchmark assessment up in the SEDAR process, if possible.*

- D. Review the treatment of selectivity – the recreational selectivity at age changed with implementation of the first recreation size limit of 10” TL (1/1/92), the 11” TL size limit (2/24/99), and then the 12” TL size limit (10/23/06). Was this modeled correctly? Are these changes accounted for in the management advice? If not, what affect would they have on management advice?

*Selectivity was accounted for appropriately in the model. The 2006 size change has likely had little influence on the assessment results because it has only been in effect for approximately 6 months.*

- E. How were discards estimated and modeled? How are discards estimated for the future? What exactly is included for discards in the estimated management values from the model?

*Discards were handled in the same manner as the benchmark assessment. Discards were not a separate data stream in the model as this would have been a modification outside of the guidelines for an update. However, discards were incorporated into the landings data*

*used. Recreational discards were obtained from MRFSS estimates. There were no direct measurements of discards from the commercial fishery. Commercial discards were determined from the difference between the selectivity curves before and after minimum size limit regulations. Discards are estimated in the future the same way as past – assuming current minimum size limits.*

F. Is the stock undergoing overfishing?

*The ratio of  $F$  for 2006 (0.729) to  $F_{max}$  (0.355) results in a value of 2.05 indicating the stock is overfished. This value is very similar to the values produced during the benchmark assessment, which was 1.71.*

G. Is the stock overfished?

*Because of the uncertainty in the spawner-recruit relationship, the SSC did not have confidence with the calculated biomass reference points. This uncertainty posed similar problems during the benchmark assessment. As such, this could not be determined from the results of the update.*

H. Is the stock approaching an overfished status?

*This could not be determined for reasons stated above. However,  $F$  values continue to indicate overfishing is still occurring and at a slightly higher rate, supporting a slow move towards overfished.*

I. Provide an Allowable Biological Catch Level to prevent overfishing. This catch level must include discards. This can be viewed as a 2-part process with the Biological Sub-Committee taking the lead on developing the ABC and the Socioeconomic Committee taking the lead on providing guidance to the Council on where between ABC and 0 the TAC should be set based on balancing the socioeconomic impacts and the need to be risk averse.

*As stated in the earlier roadmap items for gag, the SSC did not feel comfortable establishing these values without guidance. However, a value of yield was calculated using the current definition of  $F_{OY}$ . In order to fish at this level, a calculated reduction of 61% of the total catch, which results in reducing total landings to 628,459 lbs, would be necessary. These calculations were based on the yield per recruit at the geometric mean of the 2004-2006 fishing mortality rates compared to that at 75%  $F_{max}$ .*

J. Does the absence of commercial and recreational data from the Atlantic side of the Florida Keys affect the outcome of the assessment?

***The SSC could not find discussion in the report indicating how landings from the Keys were handled; therefore, we could not provide comment on the presence or absence of these data.***

K. Any SSC suggestions on how to have recreational and commercial data provided from the Atlantic side of the Florida Keys for inclusion in future assessments and updates. (Note: this applies to most if not all of the SEDAR assessments and updates.)

***See previous comment for roadmap item J.***

L. Write the Review Report (see gag grouper example).

***The Review report will be written and submitted to Council staff one month from June 12, 2007.***

M. Write the Advisory Report (see gag grouper example).

***The Advisory report will be written and submitted to Council staff one month from June 12, 2007.***

N. See remaining items in Rick DeVactor's comments.

***The SSC did not provide comments on this item.***

O. See new material added by Gregg Waugh.

***The graph was reviewed by the SSC. The SSC did not have confidence in the biomass benchmarks, which the graphic depicted the problems with those calculated values.***

P. Biomass values seem to be unreasonable. If we can't be provided an estimate of the current biomass, is the estimate of MSY that was provided usable?

***The SSC did not recommend using the biomass estimates for management.***

Q. Are the assessment update results useful to the Council for management or should the results be rejected and a new age-based benchmark assessment requested. For example, would you expect the 90 commercial lengths to adequately characterize the 2005 commercial hook-and-line fishery? Does the number of fish measured in 2006 (3,565) adequately characterize the fishery, particularly without any headboat samples?

*As stated previously, the SSC did not recommend the use of the biomass reference points; however, they did have confidence in the  $F$  values and as such recommended using the reduction in the  $F$  ratio to guide the Council in the necessary reduction in landings. Although length sampling was minimal in some years, the consistency of the results between the benchmark and update lend support to the  $F$  and  $F_{max}$  estimates.*

- R. Can the MSY from the original benchmark be used? Can the  $F$  rates be used? In light of the large changes to the landings data, should the Council base SFA parameters on output from the original benchmark assessment.

*The MSY from the original benchmark cannot be used due to the same problems described above. The  $F$  rates from the original benchmark and updated assessment are considered reliable. Thus, the SSC recommended the use of the  $F$  values and not the biomass values from the update.*

**Note: Amendment 15 uses SFA parameters based on the original benchmark assessment so some of the changes/decisions will impact Amendment 15.**

**4. Snapper Grouper Amendment 15 (Rebuilding programs, etc.)** – review preliminary economic model results; provide input to Council before they approve for public hearings. SSC written recommendations presented to Snapper Grouper Committee on June 12<sup>th</sup> at 1:30 PM.

Items to be provided by the SSC include but are not limited to the following:

**NOTE:** *Discussions on the roadmap items led to the following blanket statement for the SSC. The SSC does not endorse Amendment 15 as the best available science due to the complete absence of socio-economic information, and does not recommend sending Amendment 15 to public hearing until the socio-economic information is included and reviewed by the SSC. This is consistent with the previous SSC findings that Amendment 15 is incomplete.*

- A. Review the action that would limit black sea bass pot effort through either limiting the number of black sea bass pots allowed or the distribution of pot tags. Is this based on the best available science?

*Amendment 15 document is incomplete, and due to this fact, the SSC is unable to advise if the actions to limit black sea bass pot effort are based on the best available science. The SSC recommends adding for public hearing an alternative that incorporates limits to trap sets (require traps to be set and retrieved in same trip to prevent seasonal potting, meaning setting pot at beginning of season, removing at end of season) that in essence is an active promotion of ghost pots. The committee*

***is concerned that ghost pots are an unaccounted source of black sea bass and other species mortality, and daily retrieval of the pots would reduce that uncertainty. The SSC also has two research recommendations: to survey black sea bass pot participants to determine how many pots are lost per year per fisherman; and to provide the SSC with results from relative ghost pot studies, to include number of species and fish.***

B. Team has added the SSC's recommended scenarios for the estimation of discards for 3 overfished species. The Council directed staff to present the results to the SSC, especially for red porgy where the SSC recommended the use of different years from those used in the scenarios developed by the team. Is this based on the best available science?

***Yes, this is based on the best available science, as also determined during the December, 2006, SSC meeting.***

C. Provide an Allowable Biological Catch Level to prevent overfishing for snowy grouper, red porgy, and black sea bass. [Note: Special attention should be paid to snowy grouper as the quota is based on Fmsy.] These catch levels must include discards. This can be viewed as a 2-part process with the Biological Sub-Committee taking the lead on developing the ABC and the Socioeconomic Committee taking the lead on providing guidance to the Council on where between ABC and 0 the TAC should be set based on balancing the socioeconomic impacts and the need to be risk averse.

***The SSC recommends using the rebuilding trajectories for all three aforementioned species, in the absence of an annual catch limit, until an update or benchmark assessment is completed. The SSC is concerned about their development of ACLs without NOAA guidelines but will proceed with the process by using the existing criteria and historical practices of the SAFMC.***

D. Is the proposed bycatch reporting program sufficient to meet the requirements of the reauthorized MSA?

***It is the SSC's opinion that the bycatch practicability analyses meet the requirements of the reauthorized MSA.***

E. Review change in the recreational overage alternative. The alternatives previously read that action should be taken if recreational overages occur for 3 and 5 consecutive years for alternatives 4a and 4b, respectively. Now it reads to take action if overage occurs based on a 3 year and 2 year running average, respectively. Is this sufficient to prevent overfishing?

***The preferred alternative is not sufficient to prevent overfishing. The SSC recommends that the appropriate resources are made available to provide for in-season quota management of the recreational fishery.***



F. In the action that forms a deepwater snapper grouper complex to reduce bycatch, the Council retained the 1 fish vessel limit for speckled hind and Warsaw grouper for the recreational sector (action would still take off the books for the commercial sector). Council also wants staff to explain to the SSC the Council's rationale for removing the commercial 1 fish vessel limit for the commercial sector as the SSC has biological concerns with the Council taking this action.

***Council staff provided the rationale to the SSC, and the SSC did not have further comment on the matter.***

G. In terms of rebuilding strategies, constant catch strategies were moved to the "Considered But Rejected Alternatives Appendix" for snowy grouper and black sea bass as they would allow overfishing to occur for a significant number of years. All rebuilding strategies for the 3 overfished species now have an estimation of discards included.

***The SSC was so advised.***

H. Allocation alternatives have been added for snowy grouper and red porgy. Are these based on the best available science? Have the potential economic and social impacts been analyzed sufficiently?

***As the SSC noted in discussions, as well as their prepared report, from the June 2006 meeting in Miami, Florida, Amendment 15 contains little to no information on the economic choices and consequences of the proposed actions. The SSC currently cannot determine if the allocation alternatives are based upon the best available science due to this noted, and still present, deficiency in Amendment 15. The potential economic and social impacts have not been analyzed sufficiently, if at all, and continue to present a large void within Amendment 15.***

***As much basic economic and social analysis of alternatives must be included in order for the SSC to make informed judgments about ABC, allocations within the ABC, and all other relevant issues. Basic information must include changes in ex-vessel values and consumer surplus that would arise. This suggestion does not require heavy analysis. The products of ex-vessel price and change in landings, as well as the product of consumer surplus per fish and changes in recreational catch, are an important first level of analysis. Geographic disaggregation of the impacts would be a next step in order to understand differential economic and social impacts. These two steps can be used to help determine when impacts are relatively large, and when modeling and other more involved analyses should be conducted in order to clarify impacts and resolve uncertainties associated with the first step analyses.***

I. Jim Waters will present preliminary results of the economic simulation model. The SSC should provide comments and directions to refine analyses as necessary.

*The SSC was not presented the preliminary results of the economic simulation model and is unable to provide comments and directions for refinement of the analyses at this time.*

**5. Mackerel Amendment 18** – this is basically the same document reviewed by the SSC at the December 2006 meeting. Some of the numbers have been updated and we have received further updated landings that will be incorporated.

Items to be provided by the SSC include but are not limited to the following:

- A. Is this amendment based on the best available science?
- B. Review the potential new alternative for Atlantic king mackerel TAC of 7.6 million pounds based on the SEDAR 5 updated projections. The current preferred is TAC = 7.1 (ABC = 5.3 – 9.6 MP). Commercial catches almost equaled the quota for 2006/07 and the Council received support for a higher TAC. The TAC of 7.6 million pounds is from the updated projections (see Appendix Appendix B) and the associated ABC = 4.6 – 11.8 million pounds.

*The SSC deemed Amendment 18 to be based on the best available science at this point in time; however, the next benchmark will likely improve the science, therefore, the Council may want to defer the amendment until after the benchmark assessment is conducted next year.*

**Note:** The Council may review the final document at the September 2007 meeting before sending for formal review by Secretary of Commerce.

**6. Mackerel Amendment 19 Scoping Document** – we are very early in the process and the draft scoping document is provided for your input. Any suggestions at this stage would be appreciated.

*The SSC did not have time to go on record with discussion of suggestions or recommendations. After talking to Council staff, it was determined that written suggestions submitted after the meeting would suffice. The deadline for receiving comments from the SSC is June 26, 2007.*

**7. Research Plan Required by Magnuson-Stevens Act** – the SSC has reviewed some data needs in the past. This is your opportunity to comment on the first plan that the Council will provide to the Secretary of Commerce.

The Council's schedule for completion of the research prioritization and submission of the first SAFMC 5-year plan:

*The goal of this plan is to “Develop a research and monitoring plan for South Atlantic fisheries for submission to the Secretary in accordance with recent amendments to the Magnuson-Stevens Fishery Conservation and Management Act.” The road map had conflicting actions for the research and monitoring plan. Item #1 and Item #7 requested different actions. Item #1 asked the SSC to “review, revise, and approve” the plan while item #7 asked that the SSC only “comment” on the plan. The SSC and the council staff present at the June 2007 meeting concluded that Item #7, “comment”, was the intended action item given that this was a first draft.*

*Overall, the SSC felt that the document lacked cohesiveness and consistency, was unorganized, and was incomplete in several areas. Some examples: sections IV.5 and IV.6 were left blank, paragraphs within Methods did not have logical flow, and six priority areas described in section III were mislabeled or not present in Methods description. The SSC was concerned about how the priorities were determined and requested that reasons for the prioritization be provided.*

*The Research and Monitoring plan should be better integrated with SEDAR research needs document. Wording within the SAFMC plan should state that upcoming SEDARS will be priority and that efforts will be made to anticipate where fisheries will go if restrictions are put into place (e.g., snapper/grouper fishers switching to king mackerel).*

*The SSC recommended that all percentages (e.g., %observer coverage, %video discard) in section III.1 be removed and replaced with the word “appropriate”.*

*The SSC requests better justification for list of proposed target species in Section III.2. There were several species mentioned by SSC committee members that were not included on list. Does this list of species only apply to Research recommendations in this section? If monitoring is included then why were shrimp not included in this list?*

*The SSC concluded that the desired biological sampling intensity recommended in section III.2 (minimum elements based on ACCSP) was inadequate.*

*The SSC recommended that the Social and Economic section (III.4) include a focus on collecting data and developing models to test between different management scenarios. Item #1 was not considered as important as others. Item #2 within this section has already been addressed by Kathy Kittner although it was acknowledged that there are continuous changes. Most importantly, the SSC recommends that a research objective be a development of methods to integrate socioeconomic information with the management process.*

*For section III.5- In addition to developing maps, the SSC recommended quantifying habitat types.*

*The SSC felt that many, if not most, items listed in Section IV. Long term research needs should be a part of the research and monitoring listed in earlier sections*

#### Other edits

- p.2, lines 14-18 – Change ‘adequate’ to ‘appropriate’*
- p.2, line 17 – add the words “fishery-independent” between ‘appropriate’ and “abundance”.*
- p.2, line 24 – change ‘instance’ to ‘document’*
- p. 2, line 32- italicize ‘a priori’*
- p.2, line 40-define ‘set’ and provide more detail on “Principle 4”*
- p.2, line 41-define ACCSP*
- p. 3, first paragraph, line 4, change ‘assessment’ to ‘life history’*
- p.3, first paragraph-The five priorities listed in the first paragraph on this page do not match up with the sub-headings in section III and IV.*
- p. 3, gear details are missing from some fisheries. For example, number of nets per vessel in shrimp fishery is missing. Handline fishery is missing reel types (electric or manual) and rod vs bandit reel rig.*
- p.3, provide details on social and economic data that would be collected.*
- p. 4, change wreckfish fishery to vertical longline (primarily wreckfish).*
- p.4, line 8 and line 14, soak to soak time.*
- p. 4, line 9, Add duration to Per trip line*
- p. 4, two lines up from bottom- add “and size” after species.*
- p. 6, line 1, spell out FSSI*

#### **8. NMFS Comparisons: Electronic vs Paper Logbooks vs State Trip Tickets**

NMFS will present the results of their analyses comparing electronic vs paper logbooks vs state trip ticket data. The Council will consider requiring electronic logbooks in the FEP Comprehensive Amendment. The Council is also concerned about the duplication of paper logbooks versus state trip tickets (not the bycatch or economic logbooks but the landings logbook).

The SSC should review and provide any recommendations as appropriate

*Dr. Steve Turner with the NOAA Miami lab presented the preliminary results of the logbook comparison. No documentation was supplied for review; however, general comments from the SSC were directed to Dr. Turner.*

#### **9. Written SSC Reports** – the written SSC reports will include the following:

- A. Vermilion Snapper Review Report
- B. Vermilion Snapper Advisory Report
- C. SSC Report (compiled from the various written reports presented to the Committee/Council with the expanded rationale). **The SSC Written Report must be completed by the end of the day on June 12, 2007.**

*The vermilion snapper review and advisory reports will be generated and submitted to Council staff one month from today (June 12, 2007). As stated previously the SSC was able to produce a report prior to the end of the meeting;*

*however, this document has not been reviewed in full by the SSC. The final document will be submitted to Council staff Monday June 18, 2007.*

**10. December 2007 Meeting** – December 2-4, 2007 or December 1-3, 2007 [SSC INPUT REQUESTED ON DATES – SATURDAY VS SUNDAY START] at the Sheraton Atlantic Beach Oceanfront Hotel, Atlantic Beach, NC. Agenda items include:

- A. Snapper Grouper Amendment 15
- B. Fishery Ecosystem Plan
- C. FEP Comprehensive Amendment
- D. Mackerel Amendment 19 (king mackerel stock boundary & permits)
- E. Shrimp Amendment 7 (evaluate removing the rock shrimp use-it or lose-it action)
- F. Snapper Grouper Amendment 16 (Limited Access Privilege Program or LAP Program)

*The SSC has requested the meeting begin on Sunday December 2 with a later start time. This would help accommodate a number of members who currently have to travel on Saturday. Additionally, it was suggested that the meeting run two full days (Monday and Tuesday) with Sunday being an overview day for agenda items and presentations. The SSC also requested waiting to determine start days for the 2008 meetings until we could see how the requested format works for accommodating the meeting requirements and workloads.*

Table A South Atlantic gag landings by sector in thousands of pounds

Year	Handline	Longline	Diving	Trawl	Other	Headboat	MRFSS	Total
1962	150	0	0	0	0	132	97	379
1963	137	0	0	0	0	120	88	345
1964	128	0	0	0	0	113	83	324
1965	130	0	0	0	0	116	85	332
1966	99	0	0	0	0	88	64	251
1967	210	0	0	0	1	185	135	531
1968	308	0	0	0	1	278	204	792
1969	210	0	0	0	7	190	140	547
1970	283	0	0	0	16	262	192	752
1971	300	0	0	0	7	270	198	774
1972	171	0	0	0	34	168	104	476
1973	284	0	0	0	6	308	208	806
1974	371	0	0	0	2	256	288	916
1975	420	0	0	1	0	144	293	859
1976	555	0	4	8	2	129	407	1105
1977	576	0	0	46	5	136	352	1116
1978	947	0	0	5	16	85	533	1586
1979	882	0	19	13	13	129	482	1537
1980	775	2	0	63	6	85	434	1365
1981	885	1	14	86	12	147	605	1750
1982	969	5	16	50	4	128	185	1356
1983	1026	40	9	32	3	132	626	1869
1984	1057	22	19	14	15	206	1641	2974
1985	848	4	12	4	10	158	516	1551
1986	803	13	6	4	0	134	332	1293
1987	767	87	22	3	1	187	631	1698
1988	611	56	13	4	2	201	465	1352
1989	944	14	22	0	9	174	544	1707
1990	755	21	19	0	7	139	367	1309
1991	614	10	85	0	32	114	273	1128
1992	686	5	107	0	0	124	423	1346
1993	751	5	78	0	1	121	1164	2120
1994	790	4	98	0	6	95	574	1567
1995	834	4	84	0	3	111	452	1488
1996	745	4	119	0	3	66	422	1359
1997	601	4	99	0	3	62	304	1073
1998	638	6	139	2	9	71	361	1225
1999	533	2	113	0	4	58	512	1222
2000	430	5	63	0	3	61	291	854
2001	441	6	82	0	3	53	455	1040
2002	442	5	85	0	2	51	266	849
2003	438	4	117	0	1	32	519	1112
2004	474	1	75	0	1	82	517	1150

Figure 27. Constant catchability run: Commercial landings (klb) of gag from the assessment model, estimated (line, filled circles) and observed (open circles). A) Handline; and B) Diving. Note difference of scales.

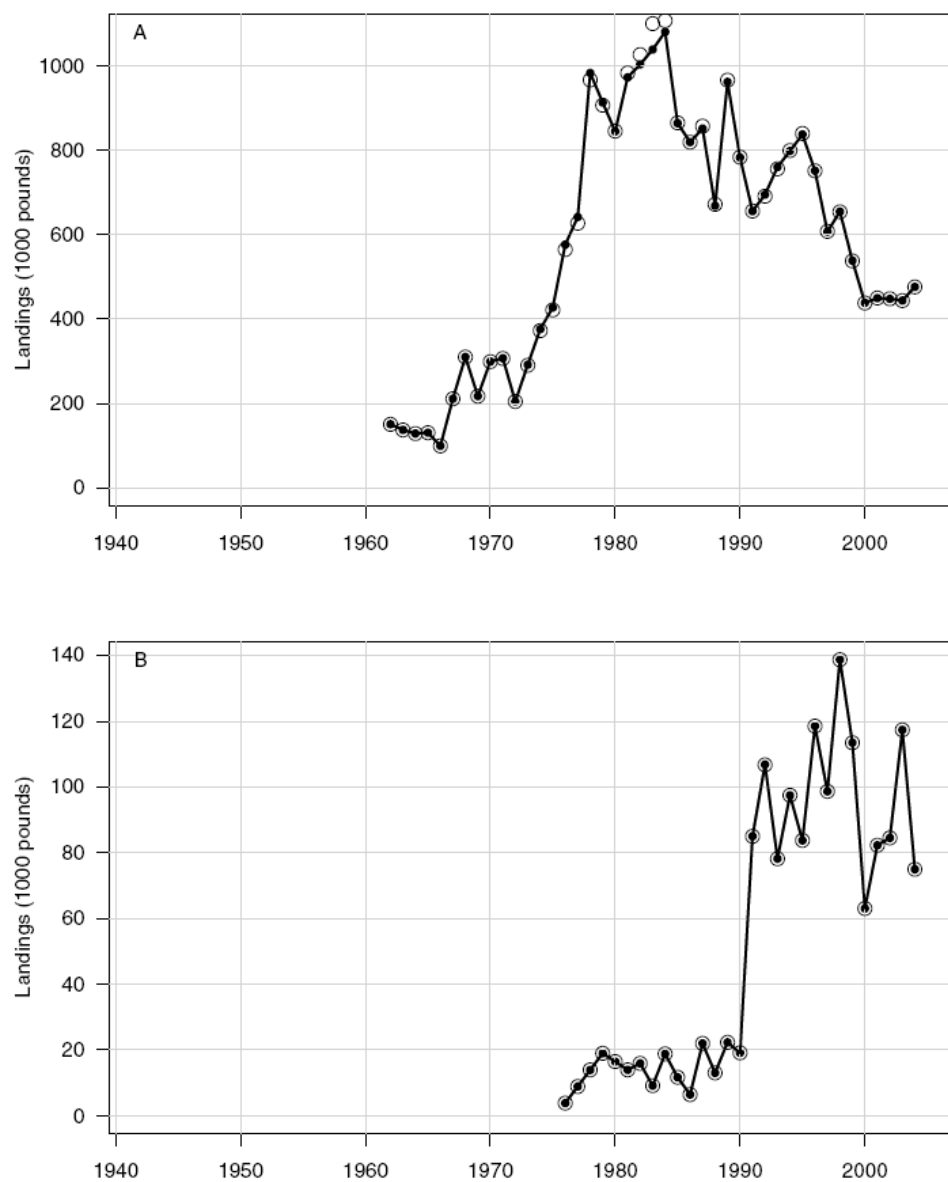


Figure 29. Gag- Constant catchability run: Recreational landings (1000s fish) of gag from the assessment model, estimated (line, filled circles) and observed (open circles). A) Headboat and B) MRFSS. Note difference of scales.

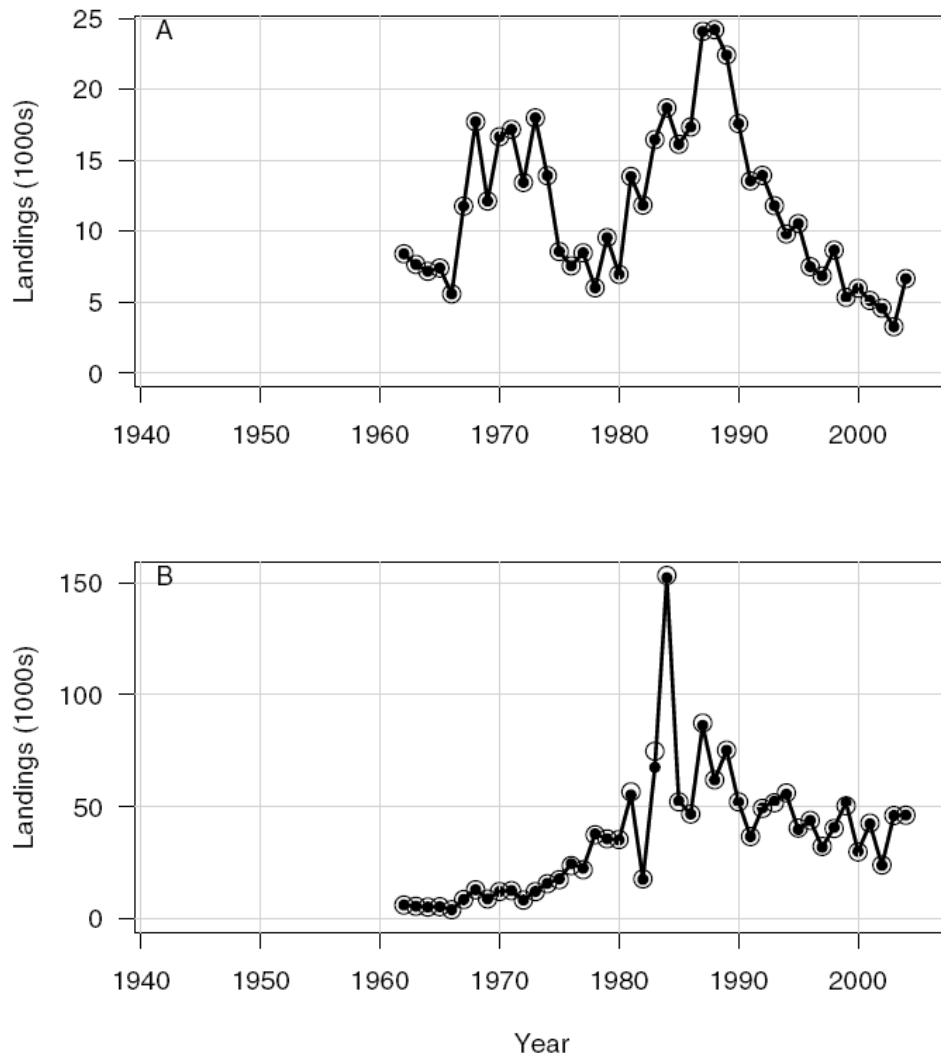




Figure 31. Gag- Discard mortalities (1000s fish) of gag from the constant assessment model, estimated (line, filled circles) and observed (open circles). A) Commercial handline; B) Headboat; and C) MRFSS. Note difference of scales.

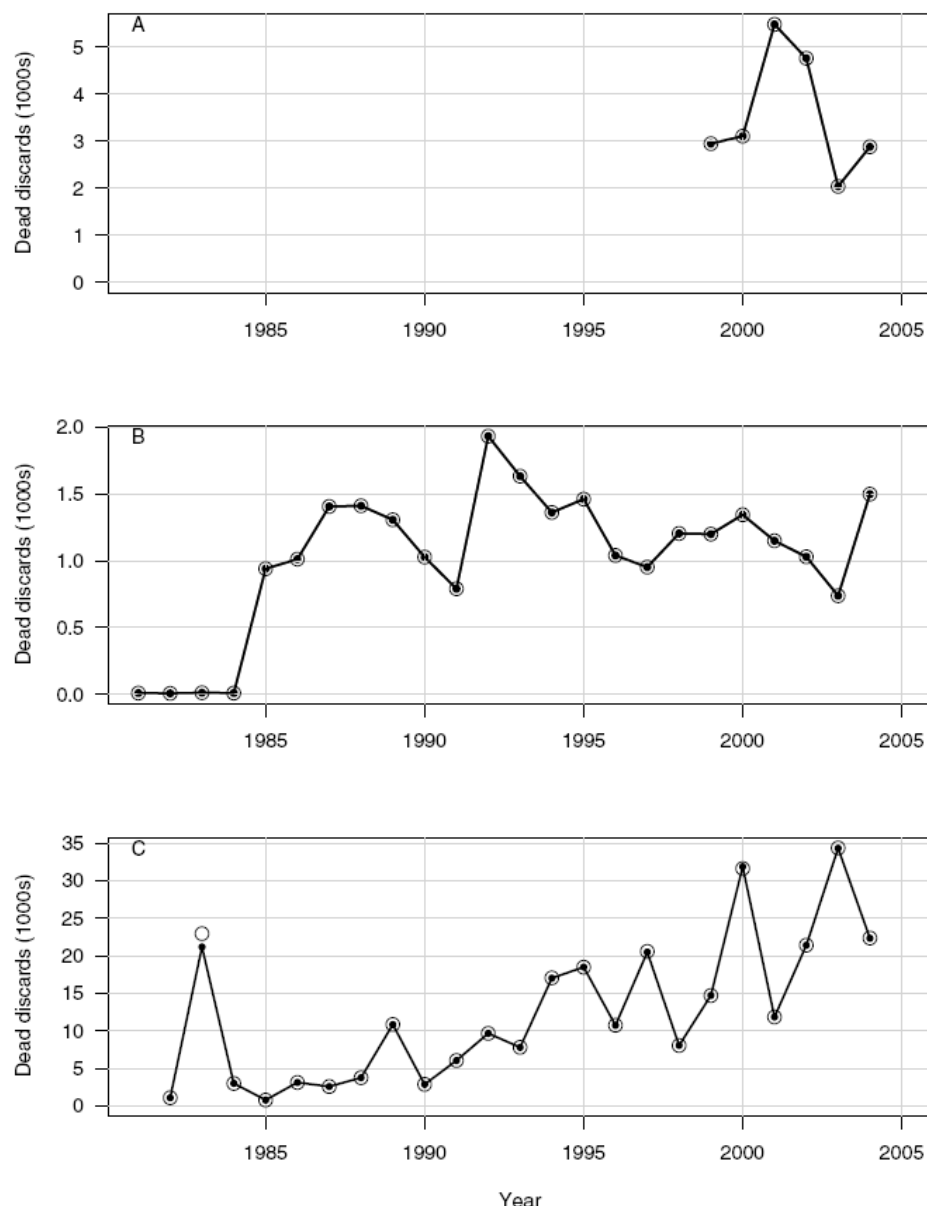


Figure 47. Gag- Base run with constant catchability: Estimated selectivities of recreational (headboat and MRFSS) fisheries. A) Period one (1962-1991); B) Period two (1992-1998); and C) Period three (1999-2004). In period one, age at 50% selection estimated annually—average curve presented.

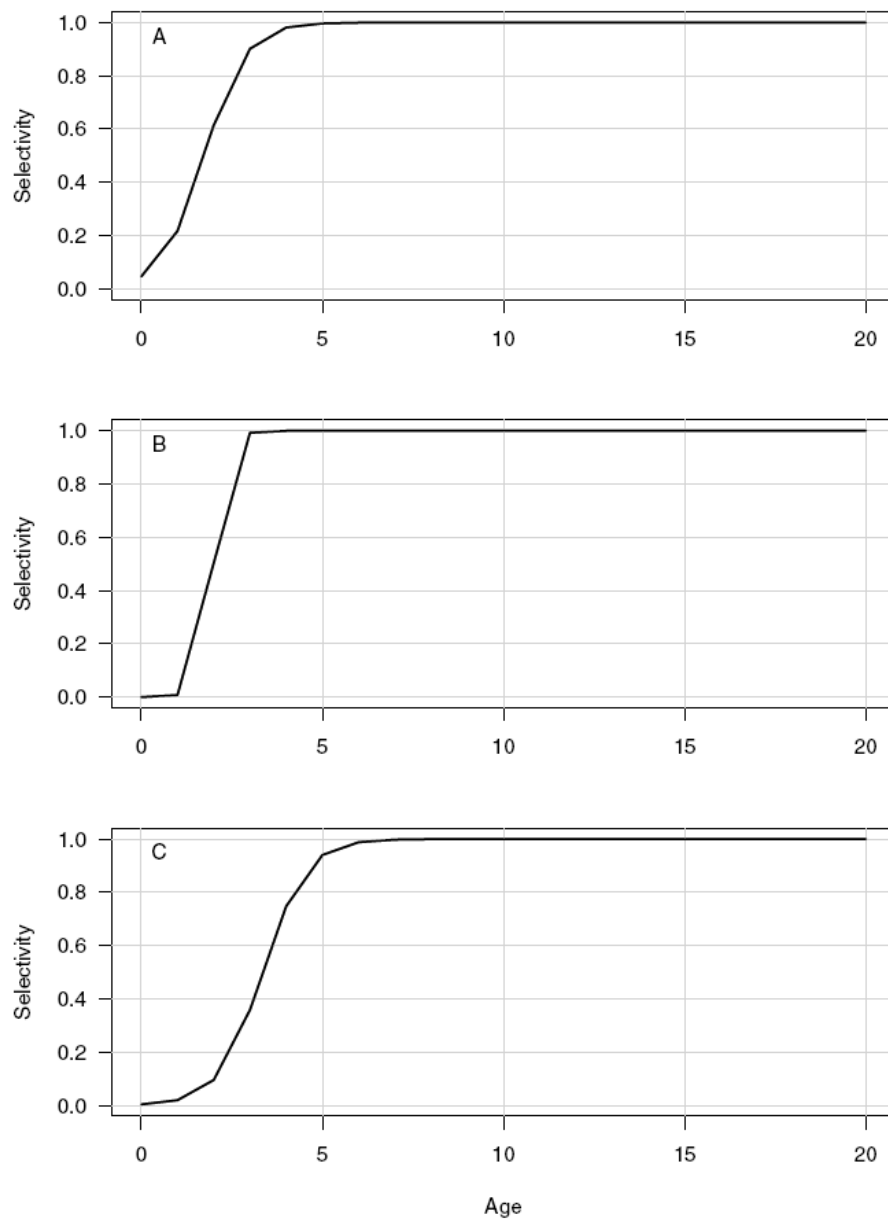


Figure 83. Gag- Base run with constant catchability: Estimated biomass time series, relative to MSY benchmarks, of A)  $B$  relative to  $B_{MSY}$  and B)  $SSB$  relative to  $SSB_{MSY}$ . In each panel, a dashed horizontal line at one indicates where an estimated time series would equal its related benchmark; a dotted horizontal line at  $1 - M$  indicates where estimated  $SSB$  would equal  $MSST$ ; thin dashed lines indicate 90% range of uncertainty from 1000 bootstrap estimates of stock-recruit curve.

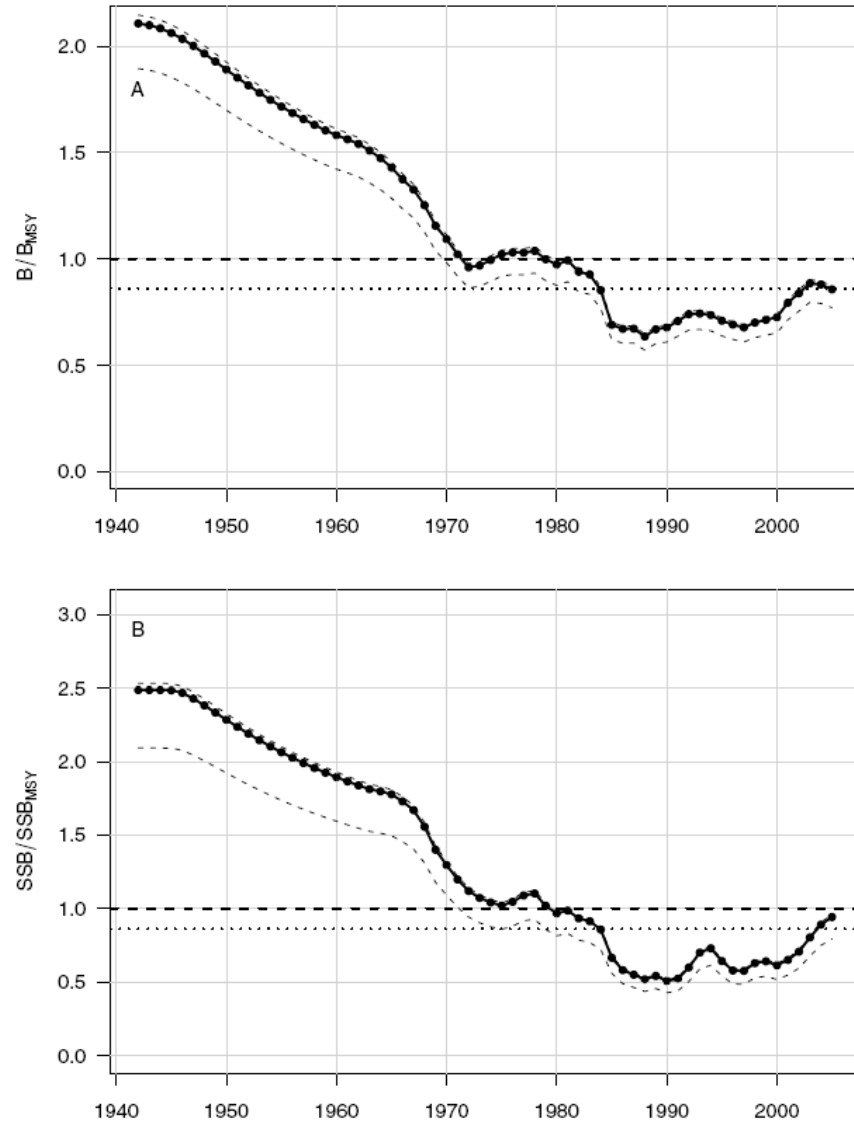


Figure 85. Gag- Base run with constant catchability: Estimated exploitation time series, relative to MSY benchmarks, of A) Fishing mortality rate ( $F$ ) relative to  $F_{MSY}$  and B) Exploitation rate ( $E$ ) relative to  $E_{MSY}$ . In each panel, a dashed horizontal line at one indicates where an estimated time series would equal its related benchmark; thin dashed lines indicate 90% range of uncertainty from 1000 bootstrap estimates of stock-recruit curve.

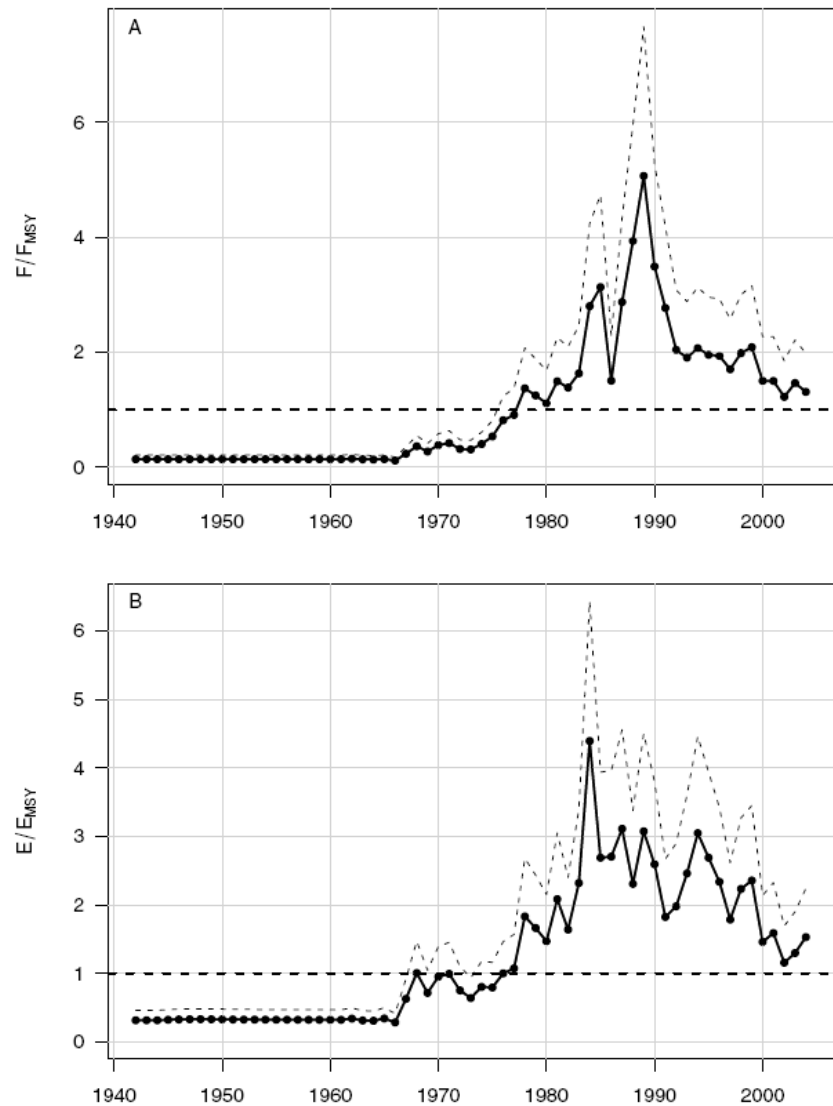


Figure 90. Gag- Base run with time-varying catchability: Estimates of total biomass (klb) from a retrospective analysis back to 1999. Ending year of model run is indicated by open circle in last year.

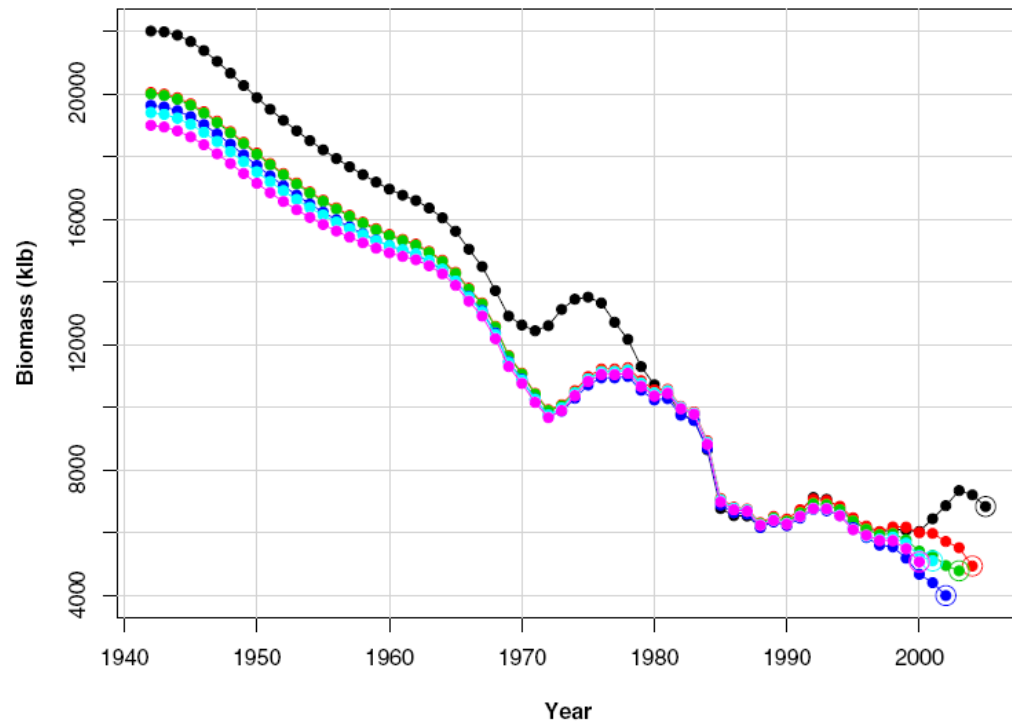


Table 16. Gag- Constant catchability run: Model estimated time series of landings in gutted weight (klb) for each fishery.

Year	C.HAL	C.Diving	Headboat	MRFSS	Total
1962	151	13	136	100	400
1963	137	13	124	91	365
1964	129	12	119	87	347
1965	130	12	127	93	362
1966	99	12	100	73	284
1967	211	12	218	160	601
1968	310	11	331	243	895
1969	217	9	219	161	606
1970	299	7	286	210	802
1971	307	5	281	206	799
1972	205	4	211	132	552
1973	292	5	123	84	504
1974	376	6	118	134	634
1975	427	8	117	244	796
1976	577	4	123	401	1105
1977	642	9	130	346	1127
1978	984	14	85	539	1622
1979	914	19	110	411	1454
1980	845	16	71	360	1292
1981	974	14	149	595	1732
1982	1004	16	124	185	1329
1983	1040	9	158	649	1856
1984	1082	19	186	1515	2802
1985	865	12	141	458	1476
1986	820	6	135	363	1324
1987	852	22	174	625	1673
1988	669	13	157	402	1241
1989	963	22	149	500	1634
1990	783	19	116	343	1261
1991	656	85	95	256	1092
1992	695	107	108	385	1295
1993	761	78	103	457	1399
1994	799	97	97	552	1545
1995	838	84	105	397	1424
1996	752	119	68	402	1341
1997	607	99	60	281	1047
1998	655	139	79	371	1244
1999	539	114	60	580	1293
2000	439	63	68	342	912
2001	450	82	58	477	1067
2002	448	85	51	265	849
2003	444	117	37	517	1115
2004	476	75	76	532	1159

Table 9. MRFSS Estimates of numbers of gag landed by recreational anglers in the Southeast US Atlantic with percent standard error estimates (PSE). Landings are in thousands of fish.

	Private Boats		Charter Boats		Shore-based		Total	
Year	A + B1	PSE	A + B1	PSE	A + B1	PSE	A + B1	PSE
1981	0.46	100.00	50.53	50.98	5.71	71.50	56.69	46.51
1982	0.71	61.11	15.47	63.47	1.67	100.00	17.85	47.9
1983	0.60	77.38	74.23	52.77	0.00		74.82	52.32
1984	13.38	30.70	137.45	29.13	2.41	49.74	153.25	20.66
1985	6.45	37.31	37.90	44.18	7.87	56.38	52.22	29.78
1986	0.72	52.98	19.91	27.72	26.15		46.78	26.93
1987	4.22	29.18	80.78	38.82	2.38	73.39	87.38	35.81
1988	22.11	25.44	39.96	24.49	0.00		62.07	20.36
1989	15.56	24.51	55.29	22.39	4.43	100.00	75.28	17.49
1990	13.45	18.90	37.37	36.36	1.38	71.58	52.20	26.71
1991	8.73	17.20	23.85	24.36	4.13		36.71	19.05
1992	15.90	24.51	33.42	16.21	0.00		49.32	13.53
1993	18.67	26.66	32.75	28.68	0.38	70.94	51.80	20.43
1994	22.30	20.97	32.27	26.10	1.64	66.67	56.22	17.2
1995	18.21	33.16	19.04	26.97	3.28	100.00	40.53	20.82
1996	11.82	30.67	31.33	26.93	0.77	99.04	43.92	20.48
1997	10.52	35.79	21.81	25.79	0.00		32.33	21.86
1998	8.17	38.77	32.15	33.49	0.00		40.32	29.44
1999	16.91	20.51	33.08	31.70	0.46	100.00	50.45	22.25
2000	10.67	25.69	19.21	20.80	0.00		29.87	16.24
2001	7.97	18.98	31.93	22.55	2.84	71.13	42.74	18.1
2002	5.86	18.59	18.18	24.99	0.00		24.03	19.36
2003	9.15	35.14	36.96	17.58	0.00		46.11	15.73
2004	8.27	18.15	37.99	20.00	0.00		46.25	17.14

Figure 12. Estimated time series of spawning stock biomass (klb, gutted weight) from the base run model with constant catchability. The base run model with all data included is illustrated with a thick black line. Other runs with the labeled dataset left out of the model are shown in various colors and point markers.

*Note: The time series of estimates for several of these sensitivities, notably logbook CPUE, handline age comp, and diving age comp changed considerably following the recreational data correction. The large spike in SSB predicted for these runs around 1970 did not appear in the original versions.*

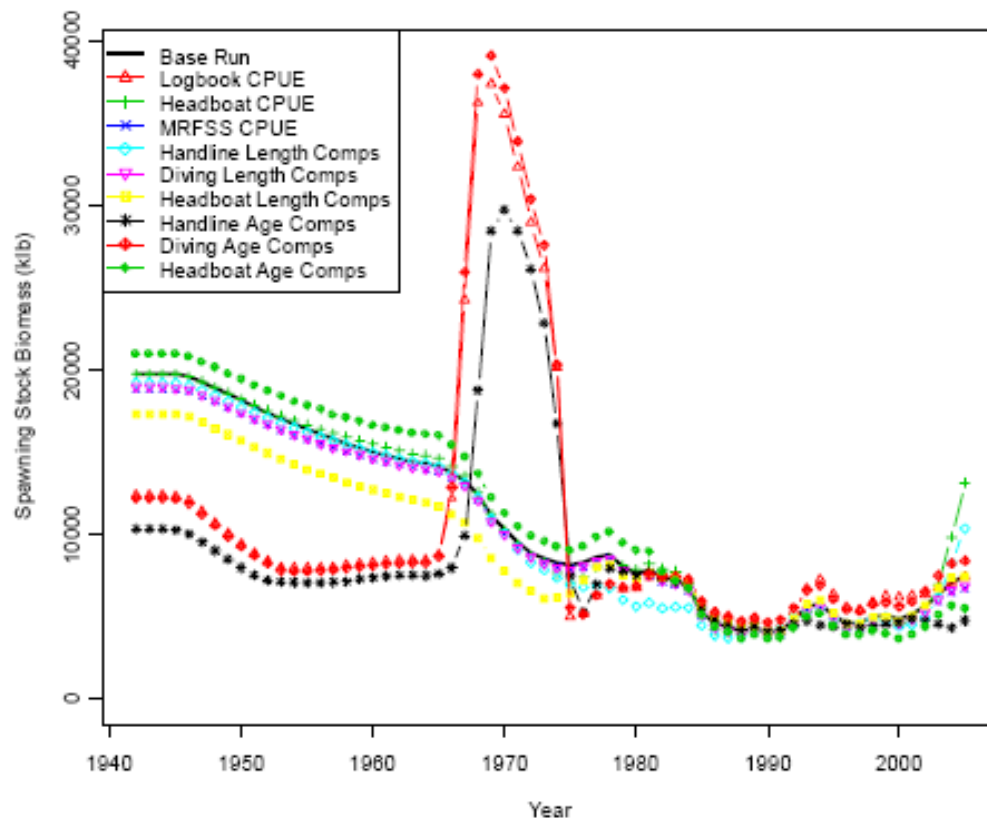
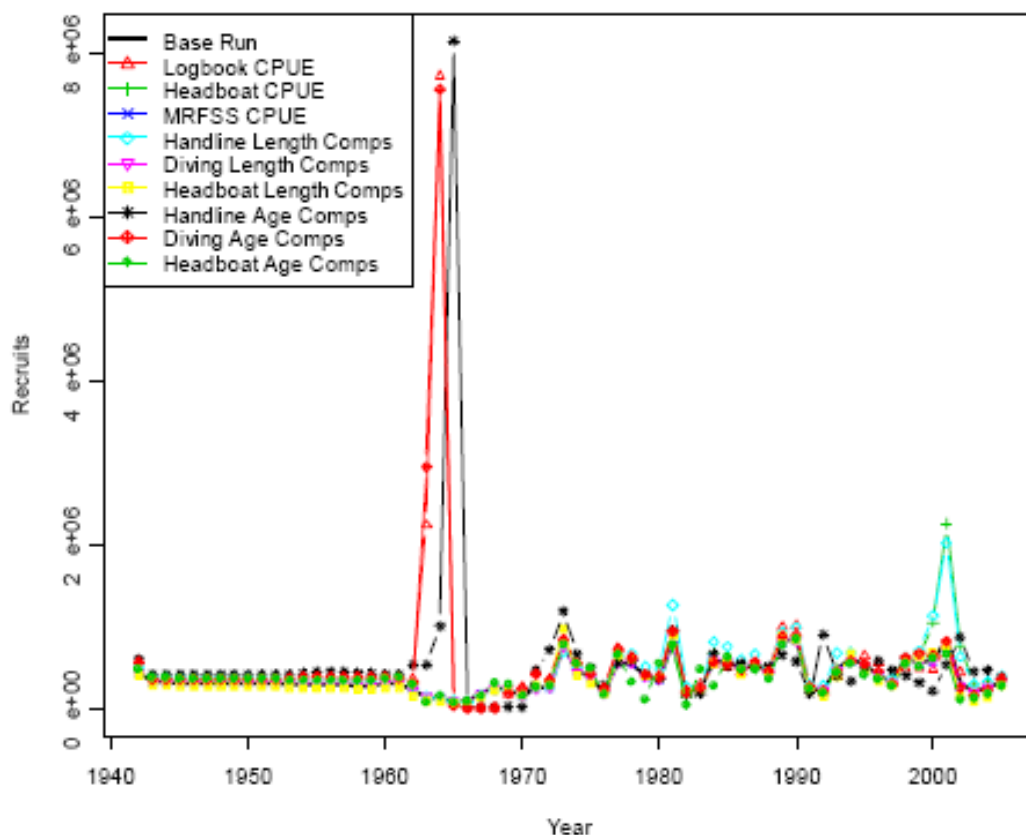




Figure 14. Estimated time series of recruitment from the base run model with constant catchability. The base run model with all data included is illustrated with a thick black line. Other runs with the labeled dataset left out of the model are shown in various colors and point markers.

*Note: The time series of estimates for several of these sensitivities, notably logbook CPUE, handline age comp, and diving age comp changed considerably following the recreational data correction. The large recruitment spikes in the mid-1960's did not appear in the original analyses.*



**Report of the Gag Annual Catch Limits Workgroup  
SSC Workshop Meeting, September 25-26, 2007****Participants:**

Dr. Erik Williams, SSC Biological Subcommittee  
Dr. Chris Dumas, SSC Socio-Economic Subcommittee  
Dr. Jim Kirkley, SSC Socio-Economic Subcommittee  
Dr. Andy Cooper, SSC Biological Subcommittee  
Dr. Andi Stephens, NRC Post-Doc (Future SAFMC Staff)  
Dr. Jim Waters, NMFS  
Dr. Doug Vaughan, NMFS  
Dr. Kyle Shertzer, NMFS  
Mr. Rob Cheshire, NMFS

**Important Note:**

This meeting was handicapped by one crucial missing piece of supporting documentation, the National Marine Fisheries Service, National Standard guidelines (NMFS NS). At the time of this meeting, the NMFS NS guidelines had not been finalized. However, Dr. Rick Methot (NMFS S&T) did provide some preliminary presentation materials offering good indication of the direction the guidelines are headed. Using this information we proceeded with the meeting, realizing we might not be able to finalize any decisions without having the final NMFS NS guidelines in hand. As evidenced by discussions both during and after the meeting, there is still a great deal of confusion surrounding NMFS's intentions based on the preliminary documents and the suggestions presented in this report should be taken in that light.

**Report:**

The meeting followed the terms of reference provided (see attached). This report addresses TOR#5 and will be presented to SAFMC in December, thereby addressing TOR#6.

**TOR#1**

The workgroup began by reviewing the language specific to Annual Catch Limits (ACLs) in the Magnuson-Stevens Conservation and Management Act (MSCMA). The language in the MSCMA specific to ACLs is quite limited. Section 109-479 (6) states that fishery management Councils shall "develop annual catch limits for each of its managed fisheries that may not exceed the fishing level recommendations of its scientific and statistical committee or the peer review process established under subsection (g)". This workgroup interpreted section 109-479 (6) to mean that the scientific and statistical committee (SSC) would be setting a recommended fishing level and the council would be selecting the ACL. As defined in the language, the ACL selected by the council shall not exceed the recommended fishing level provided by the SSC.

The language in the MSMCA also suggested that the metric used for management is fishing level, which this workgroup interprets as fishing mortality rate. This notion seems to be supported by other language in the MSMCA in section 104-479 (15), which states, a fishery management plan shall “establish a mechanism for specifying annual catch limits in the plan (including a multiyear plan), implementing regulations, or annual specifications, at a level such that overfishing does not occur in the fishery, including measures to ensure accountability”. The language in this part of the MSMCA seems clear that “a level such that overfishing does not occur” refers to a measure of fishing mortality rate despite the fact that ACLs must be stated in terms of biomass or numbers of fish.

### TOR#2

The workgroup reviewed a proposed methodology for computing recommended catch levels, the details of which were presented in a draft manuscript prepared by Shertzer, Prager, and Williams, titled “A Probability-Based Approach to Setting Annual Catch Levels”. The proposed method allows for the computation of catch levels based on a prior setting of the probability of overfishing ( $P^*$ ). This level of risk will be established or assigned by resource managers. The workgroup agreed that this method directly addresses the language of the MSMCA, though some modification may be necessary to better account for implementation uncertainty. The workgroup appreciated the feature requiring the explicit expression of  $P^*$  for determining a catch level. Managers will essentially be forced to declare how risk prone/averse to overfishing they would like to be in setting a catch level with this method. The workgroup fully endorses the use of this method with possible modifications for computing recommended catch levels.

### TOR#3

Without NMFS NS guidelines in hand, the workgroup was not able to finalize a general procedure for developing fishing level recommendations. However, based on presentation materials provided by NMFS S&T, we did gain some important insight into where the NMFS NS guidelines are likely headed. The general procedure outlined in the NMFS S&T materials suggests that an Overfishing Level (OFL) needs to be set first. The benchmark could be in the form of a catch level or a fishing mortality level. It seems the West Coast has tended to express the OFL in terms of catch. For the South Atlantic, the OFL should probably be set equal to MFMT, the maximum fishing mortality threshold. The MFMT is most commonly derived from stock assessments and is usually equal to  $F_{MSY}$ , the fishing mortality rate at maximum sustainable yield.

Based on the NMFS S&T materials, once OFL is set, then an allowable biological catch (ABC) is set by the SSC. The value of ABC should be set such that overfishing does not occur. In the MSMCA this appears to be the recommended fishing level set by the SSC (see TOR#1 above). This is the stage of the process where the proposed method in TOR#2 will prove useful.

There was some discussion and confusion among the workgroup members regarding the next step of the process, which translates the ABC set by the SSC into an ACL set by the council. Some workgroup members thought that the council would in most cases set  $ACL=ABC$ , which in effect would mean that the SSC will set ACLs. Others thought there might be some reasons to set the ACL less than the ABC, but the MSMCA is clear that ACL cannot be greater than ABC.

In the NMFS S&T presentation materials a new term was introduced to the workgroup, namely the annual catch target (ACT). The process, as interpreted by this workgroup, suggests that an ACT should be set in order to avoid exceeding the ACL. The workgroup generally agreed that this is where the proposed method in TOR#2 could be useful in setting an ACT. Much discussion at the meeting focused on understanding the distinction between ACL and ACT. It appears the setting of  $ACT < ACL$  is an attempt to account for management implementation error, the difference between a fishery quota and the realized landings in a given year. This seems especially important for recreational fisheries, where in-season management to prevent quota overages is nearly impossible.

There was some good discussion about how the proposed method in TOR#2 should include implementation error. One suggestion was that a second probability ( $P^{**}$ ) might need to be set in the process to express the chance of the realized catch exceeding the ACL. Based on  $P^{**}$ , an ACT could be determined using the same method as computing the ABC in TOR#2. Other group members suggested that both  $P^*$  and  $P^{**}$  would necessarily have to be set simultaneously because there is some interaction between the probability of overfishing and the probability of exceeding the ACL. In general, the higher the implementation error the lower the ACT will need to be set in order to avoid exceeding the ACL.

This workgroup discussed how this process would work with the needed interaction between the SSC and SAFMC. It was suggested that the likely avenue would be for the SSC to approve and provide tables of outcomes corresponding to various combinations of  $P^*$  and  $P^{**}$  settings. These tables would include the catch level, but will likely also have associated economic outcomes and any other factors the SAFMC deems important when considering appropriate levels for  $P^*$  and  $P^{**}$ . The selection of a  $P^*$  and  $P^{**}$  by the SAFMC can then be used in the proposed method in TOR#2 to compute the corresponding ACL and ACT levels.

The workgroup felt fairly strongly that the setting of  $P^*$  and  $P^{**}$  is strictly up to the SAFMC to decide and not a scientific decision. That is, members of the Council and resource managers should have the responsibility of establishing  $P^*$  and  $P^{**}$ . The work group felt the SSC's role is to provide the computations for ACLs and ACTs, but not to decide how risk prone/averse the SAFMC would like to be with respect to overfishing or exceeding the ACL. However, it was also recommended that efforts be taken, whether by NMFS, the SSC, or outside researchers, to demonstrate and explain the potential long- and short-term biological and economic impacts of choosing one value of  $P^*$  or  $P^{**}$  over another.

Another issue that arose during discussion was the importance of determining the time horizon over which to compute ACLs and ACTs. In determining  $P^*$  and  $P^{**}$  the SAFMC must be clear in whether this should be an annual probability or a cumulative probability for a specified time horizon. If  $P^*$  and  $P^{**}$  are simply treated as an annual probability, then the actual risk of overfishing or exceeding the ACL is greater for longer time horizons. The  $P^*$  and  $P^{**}$  can easily be adjusted for the cumulative probability, but this requires the specification of the time horizon over which to consider the ACLs and ACTs. It is highly unlikely this will be done annually and therefore the suggested time horizon is one which matches the assessment cycle for the given species. It was noted that the longer the time horizon, the smaller the ACL and ACT would likely be for a given  $P^*$  and  $P^{**}$ , creating pressure for more timely stock assessments.

The final topic of discussion about the development of a general framework for setting ACLs, was the topic of how to handle data poor species. The term for these stocks from the NMFS S&T presentation materials was “ecosystem component stocks.” There was some discussion about whether or not all species in the snapper-grouper FMP would need to have ACLs or ACTs specified. It seems the MSMCA intends for all stocks that are in an FMP to have an ACL. The group agreed the species included (or not) in the snapper-grouper FMP should be reconsidered. It is not clear who makes that decision, but it should be addressed. It seems likely that a general procedure for setting ACLs will have to take a tiered approach based on the information available for the species or stocks.

The method described in TOR #2 (the Shertzer et al. method) works well for stocks that have been assessed, but it is uncertain as to how to apply that method to data poor stocks. Many of the practices used in other regions for data poor species involve analysis of historical landings. One idea would be to set the ACL equal to the lowest recorded landings in the history of the fishery. Another idea would be to set the ACL equal to some proportion of the recent average landings. It might be useful to take one SEDAR cycle and devote it to data poor stocks. In the end, no concrete decisions were made regarding the data poor stocks, mostly because we have not even identified them yet. A trends report, as described below, would help in identifying these species.

#### TOR#4

This term of reference asked the work group to provide ACL alternatives for South Atlantic gag. The group felt this was premature since we do not have the final NS guidelines. The group felt it would be prudent to wait for the finalized NS guidelines before proceeding with ACL and/or ACT recommendations for gag.

#### Additional Items

In addition to the terms of reference items, the work group took it upon themselves to address other issues related to ACLs and ACTs. It was pointed out at the meeting, and is probably quite obvious from this report, that there are several new terms and concepts being introduced in the MSMCA. This group concluded that it will be important to educate members of the SAFMC and the general public on the MSMCA and the NS

guidelines, once they are published. This work group had some trouble keeping the terms and their meaning straight.

Another topic addressed at this meeting was a discussion of who would do most of the work associated with ACL and ACT calculations. Clearly the NMFS Beaufort Lab has a jump on this with the proposed method in TOR#2 above. The group agreed that likely the set-up of the Shertzer et al. method would likely be done as part of the SEDAR process. However, the group felt it was important that the time and funding should be spent to create a generalized tool, perhaps with a nice graphical user interface for use by those outside of the SEDAR process. It is very likely that many scenarios of  $P^*$ ,  $P^{**}$ , and time horizons are going to be considered. In order to avoid too much back-and-forth between the SSC, SAFMC, and SEFSC, a pre-programmed, easy-to-use tool could be used by all involved.

During the discussion of member stocks in the FMP and setting of ACLs for data poor species, it became clear to those at the meeting that we would have a tough time just simply listing the data poor stocks and the data rich stocks. It was, subsequently, concluded that there is a need for a trends report for the SSC and SAFMC use. The need for a trends report has been discussed at the last two SSC meetings, and this group would like to reiterate the value and need for such an annual report. A trends report would be invaluable for determining trends in landings, amounts of biological data collected, life history characteristics, and might even include crude CPUE measures; all of which will be very useful in deciding SEDAR priorities, identification of data poor species, determining directions for increased sampling, etc. There are likely some stocks in the snapper-grouper FMP that should be dropped from management consideration, but we need data to know which species would fall into this category.

## **South Atlantic Gag Annual Catch Limits Work Group Workshop plan**

### Gag Annual Catch Limits (ACL) Workgroup:

Erik Williams, Andy Cooper, Jim Kirkley, Chris Dumas, Jim Berkson, Brian Cheuvront

### Meeting Information:

September 25 - 27, 2007 at the NOAA CCFHR, Beaufort NC

### Terms of Reference:

- 1) Review Magnuson Act language regarding fishing level and Annual Catch Limit (ACL) recommendations
- 2) Review proposed methodology for developing probability-based fishing level recommendations to support Council ACL determinations.
- 3) Develop a general procedure for developing fishing level recommendations and ACLs for SAFMC managed species.
- 4) Apply the procedure developed for (3) to South Atlantic gag and develop fishing level and ACL alternatives.
- 5) Document findings and recommendations in a written report, and submit this report to SAFMC Staff by October 5, 2007.
- 6) Present findings to the SAFMC SSC in December, 2007.

### Supporting Documentation

- 1) SEDAR 10 gag assessment:  
[http://www.sefsc.noaa.gov/sedar/Sedar\\_Workshops.jsp?WorkshopNum=10](http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=10)
- 2) Probabilistic ACL approach methods paper (discussed at June SSC):  
(Erik to provide)
- 3) 2006 Reauthorization to the MS-SFA. (Attached)
- 4) NMFS National Standards Guidelines revisions  
(Erik to provide)

**SUMMARY REPORT  
FROM THE SCIENTIFIC AND STATISTICS COMMITTEE MEETING  
Atlantic Beach, NC  
December 2 - 4, 2007**

The Scientific and Statistics Committee met December 2<sup>nd</sup> – 4<sup>th</sup>, 2007, during the SAFMC meeting in Atlantic Beach NC. The Committee discussed the following items from the Roadmap:

**2. *SEDAR 15 Reviewer Recommendations***

The SSC suggested the following people as potential reviewers:

Jim Berkson, SSC

John Olney, VIMS

Joe Powers, LSU

Joe Hightower, NCSU

**3. *SEDAR 16 Participation***

Doug Gregory will be participating in all three workshops, but will do so as a representative for the Gulf Council. Pat Harris will be in attendance at the data review workshop, as the South Carolina's data representative. There was quite a bit of discussion on the necessity of additional members to help cover the expanded duties of the SSC to cover these activities. In looking to outside resources, the suggestion was made to use graduate students as a potential source for documenting the key discussions and decisions made during each meeting.

**4. *SEDAR 17 Planning***

No one on the SSC volunteered to participate or recommended any other participants. No comments on the TORs or schedule were provided by the committee.

**5. *SAFMC Technical Committees***

The SSC recommends enlarging the current SSC first and then determining if the increased size helps address workload issues. Concerns were voiced about increased workloads that would occur with more committee meetings. The SSC approved a motion supporting the TC concept.

**6. *Fishing Level Recommendations Methodology***

For two of the ten species required to have ACLs in place by 2010, gag and vermilion snapper, the SSC recommended using the values provided by the June 2007 SSC meeting in Key West, FL (as noted in the SSC Amendment 16 response below). For the remaining eight species, Bob Trumble and Jim Kirkley have volunteered to run preliminary ACLs for up to four species each, using an approach described in the Lenfest report on setting annual catch limits for U.S. fisheries. Results will be presented at the June 2008 SSC meeting. The SSC requested the probability tables from the Shertzer et al. analysis to be made available in advance of the June meeting.

At this time, the SSC has not endorsed any specific methodology for addressing fishing level recommendations, nor designated a timeline for such.



## ***7. Snapper Grouper Amendment 16***

The SSC recognizes we need a methodology for calculating ABC's that will form the basis for the ACL's. For gag grouper and vermilion snapper, methodology was not available. For future ABC recommendations, the SSC believes the advice needs to focus on the size of the buffer between OFL and ABC. High risk fisheries require larger buffers than low risk species. As scientific uncertainty decreases the size of the buffer may decrease. Implementation uncertainty will appear in the buffer between the ABC and ACL. Given this principle, we came up with Motion #2 as an interim step in the process to define the ABC for gag grouper and vermilion snapper, due to the timeline requirements for Amendment 16.

Jack McGovern (NMFS) presented the assumptions and calculations for the post quota bycatch mortality (PQBM) of gag and vermilion snapper. The SSC agreed that the methodology was sound, but additional work was needed to complete the analysis. Particularly, adding recreational fishery calculations and information on effort shifts when fisheries are opening.

The SSC discussed the management action recommendations and took no action.

## ***8. Snapper Grouper Amendment 15A and 15B***

A) Reconsider previous rejection for lack of social and economic information.

The SSC has reviewed the commercial and recreational economic analysis of options for Amendments 15A and 15B. The economic analysis for Amendment 15A is thorough and provides estimates of economic impacts using the best available science.

NMFS staff is to be commended for producing a well-written, transparent description of the models supporting the Amendment 15 economic analysis. Relative to the 13C model, the commercial model adds consideration of changing biomass and TAC. The recreational model combines consumer surplus value information, allocation and biomass changes. In general, the models do a good job of using the available information to assess the economic impacts of multiple regulations on a very heterogeneous fishery. Overall, the models achieve a very good balance between realism and tractability, given data limitations and practical management requirements.

The qualitative economic analysis for Amendment 15B describes the difficulty of modeling allocation changes. An allocation analysis requires estimates of declining marginal value of commercial catch and recreational catch. On the commercial side, an estimate of declining price of commercial catch is difficult when the product is in heavy competition with imports. On the recreational side, the difficulty is in estimating a diminishing marginal value curve for fish caught and kept. Published estimates of value support analysis with a constant marginal value curve. This issue is theoretically important, yet it is unclear whether the MRFSS data would support a diminishing marginal value curve for individual species. With strict bag limits, it is less likely that diminishing returns will set in before the bag limit is met. In addition, for both commercial and recreational fisheries, behavioral modeling of effort should be conducted in response to allocation changes.

Although the social impact assessments in the public hearing documents in 15A and 15B were comprehensive and well written, the SSC concluded that the assessment of

the social effects or ramifications of the proposed actions and allocation was inadequate for decision-making. In essence, the social information was determined by the SSC to be incomplete and inadequate in facilitating a ranking of regulatory and allocation options. This was especially the case with respect to proposed resource allocations among commercial fishermen and recreational anglers.

It was subsequently recommended that the social scientists responsible for assessing the social effects develop an ordinal or qualitative assessment to allow managers to at least ordinally rank the various regulatory measures and allocations. These ordinal metrics should consider either singular or as a composite score to allow an assessment of the potential level of social impacts.

B) Review ABC/Fishing Level actions for consistency with rebuilding trajectories.

The rebuilding trajectories are the same that were approved in previous SSC meetings.

C) Evaluate allocation alternatives

The SSC believes that allocation issues are policy not science.

D) Endorse 15A as based on best available science and approve for public hearing;  
Endorse 15B as based on best available science and approve for public hearing.

E) If necessary, provide guidance on rectifying remaining document and analytical deficiencies.

See response to A) above.

#### **9. *Snapper Grouper Amendment 17***

The SSC members suggested discussions on some issues, such as including ecological risk assessment for species (in relation to fishing), local versus regional information to develop risk assessments for each species, and buffer sizes by fishery.

Action item #1 was vague and therefore the SSC could not provide a response. For action item #2, the SSC provided guidance on this question as part of Item #6 (Fishing Level Recommendation Methodologies).

#### **10. *Comprehensive ACL Amendment***

(1) As in past responses to action items (see October 2005 SSC report), the SSC does not approve of species groupings or indicator species, as presented to the SSC, for management purposes. The SSC supports appropriate biological and socioeconomic analyses to evaluate the possibility of managing by species groups. For example, an indicator species used for a species grouping would have to be the most vulnerable, not the species with the most data.

(2) There is a need to develop appropriate accountability monitoring metrics to ensure that we do not exceed ACLs.

(3) The SSC did not discuss this action item.

#### **11. *Snapper/grouper Amendment 18***

There was no formal presentation and this item was not discussed by SSC.

## **12. *Shrimp Amendment 7***

There was no presentation and this item was not discussed by SSC.

## **13. *SSC review of SEDAR Assessments***

The SSC should retain final determination of best available science. The review workshop should not deviate from the assessment workshop submitted base runs (should not modify base runs). Sensitivity analyses are OK and correcting simple mistakes are OK but changes in critical assumptions, characteristics in model, or philosophy should not be allowed.

A primary role of the SSC representative in SEDAR is to ensure that info necessary to develop fishing level recommendations are in the assessment. They are also there to ensure that issues critical to SSC and council are addressed and to maintain consistency across assessments in methodologies.

## **14. *Fishery Ecosystem Plan***

The potential structure of ecosystem management was introduced and discussed. The recommendations were that a lot of data needs to be addressed by all disciplines before this management approach can be implemented. Analyses should not be limited by available software. Intermediate measures included developing indicators (sustainability, bycatch, impact on habitat, impact on threatened, endangered and protected species).

## **15. *FEP Comprehensive Amendment***

This item was not discussed by SSC beyond comments made above regarding the FEP.

## **16. *Comprehensive Allocation Amendment***

It is apparent to the SSC that the resources to do this job adequately are not being provided to the team. The socioeconomic committee of the SSC requests adequate time at the next meeting to examine data needs and methodologies to satisfy resource allocation alternatives.

Strict allocations within the recreational fishery are a concern given data limitations.

Sector allocations could have consequences for example in PQBM with one sector getting larger portion of catch.

Allocations should consider much more than recreational and commercial sectors. For example, recreational allocations could be split between charter, headboat, and private. Other categories include non-consumptive groups and marine reserve advocates. Need to consider regional components as well.

## **17. *Mackerel commercial quota allocation***

Here, allocation refers to regional and seasonal allocation of commercial quota. Biogeographical boundaries (e.g., Cape Canaveral and Cape Hatteras) could be considered in lieu of state boundaries.

## Table of Motions

MOTION #1. Motion to support the TC concept, as outlined by SAFMC staff.

*Passed*

MOTION #2. The SSC recommends the use of current values of ABC and OFL (equivalent to MFMT) for gag and vermilion snapper, as established during the June, 2007, SSC meeting in Key West, FL. For gag, the equilibrium for OY (based on FOY) is 1,217,000 pounds, and equilibrium MSY is 1,238,000 pounds, with ABC for the first year of implementation expected to be 694,000 pounds and OFL expected to be 903,000 lbs. For vermilion snapper, the ABC in the first year is 628,459 pounds (whole weight), which reflects a calculated reduction of 61% of the total catch, and OFL (based on Fmax, where  $F_{max}=F_{msy}=0.355$ ) expected to be 804,888 lbs.

The SSC recognizes that there is limited information available, and an agreed to procedure for determining ABC's is currently not available. Therefore, we calculated ABC for 2008 based at the June, 2007 SSC meeting, as an interim until we can finalize our procedures. We assigned an ABC for 2009, as the same as 2008, because we recognize that a projected increase in biomass will increase the precautionary level in the second year, which has more uncertainty. The ABC values for gag grouper and vermilion snapper are based on levels used by the SAFMC in the past.

PASSED 7-3, 2 ABSTENTIONS

*PASSED*

MOTION #3: Move to send the PQBM methodology and effectiveness of the seasonal closure for commercial and recreational fisheries forward, and have Snapper Grouper AP review to determine a range of values (range of trips not taken and species avoidance) and bring results back to the SSC at the June meeting.

*PASSED*

MOTION #4. Move to accept and forward the draft document (Amendment 16) for further development, as presented to the SSC. The SSC recommends implementing market based incentives, as soon as possible, in future amendments.

*PASSED*

MOTION #5. Move to recommend that the economic analysis was adequately addressed.

*PASSED*

MOTION#5: Move to endorse 15a and 15b as best available science with the exception of social analyses concerns.

*PASSED*

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*PASSED*

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*PASSED*

# **SSC CHAIRMAN REPORT**

## **June 11, 2008**

### Agenda Item 2: SEDAR 16 Planning

*Anne Lange volunteered to observe at the review workshop. At present, the SA SSC does not have a direct volunteer to act as an independent reviewer; however, Doug Gregory will be representing the Gulf SSC as reviewer and could potentially serve that role for both councils. The chair requested the members give the act of volunteering for this role further consideration.*

### Agenda Item 3: SEDAR 18 Planning

*John Carmichael discussed the potential for deferral for the scheduling for this SEDAR to the Commission. After minimal discussion, the SSC agreed to defer.*

### Agenda Item 4: SEDAR 19 Planning

*Luiz Barbieri and Anne Lange volunteered to be observers.*

### Agenda Item 5: Fishery Ecosystem Plan and Comprehensive Amendment

*A presentation from Roger Pugliese on the FEP/CEA was made to the SSC.*

*There was a concern that fishing activity occurred within the HAPC. It seemed contradictory that fishing was occurring in the HAPC but that there wouldn't be an impact on coral habitat. The staff explained that the HAPC was a mosaic of habitats (they have high resolution mapping of these areas) and where fishing was occurring would not impact the deep water corals.*

*Several sections of both the FEP and CEA are incomplete or are piecemeal, and some are outdated. For these reasons, it is not the best available science. The SSC requests that these concerns be addressed before the FEP is finalized, and that the SSC be granted another review of the document.*

### Agenda Item 6: Shrimp Amendment 7

*The shrimp review panel report was presented and discussed by the SSC. Concerns were raised relative to the break down of the model used by the Beaufort Center to predict pink shrimp landings based on water temperature. The unexplained decline in the fishery-independent data served to reinforce the concern.*

*Two presentations regarding the status of the FMP and the economic analysis were also discussed by the group, with some general comments and suggestions provided.*

#### Agenda Item 7: Spiny Lobster

*The SSC approved the spiny lobster amendment with the suggestion that size at maturity for the individual lobster stocks be included (particularly for Florida and the Caribbean US).*

#### Agenda Item 8: Snapper Grouper Amendment 15B

*A presentation was given by Dr. S. Holiman on the economic analysis for assessing the impacts of the prohibition on the sale of recreationally caught bag limits. There was limited discussion, with much of the dialog focused on issues of illegally sold catches. The SSC endorsed the analysis as best available science.*

*Eric Williams discussed methodology to be used to convert weight of snowy groupers to numbers of individuals. The main question asked of the SSC was which selectivity should be applied a dome shaped selectivity (from the headboat) versus a flat top (from the commercial). After discussion which included the concern over the newly developing recreational fishery targeting large snowys off VA, and the impact the selectivity would have had on the previous assessment, the SSC recommended using the flat topped selectivity.*

*SSC endorsed Amendment 15B as best available science.*

*At the request of Gregg Waugh, the SSC discussed the alternatives for monitoring bycatch as outlined in 15B. After clarification from Staff, the SSC suggested alternative 3 reflects the best available science for monitoring bycatch in Snapper Grouper Amendment 15B.*

#### Agenda Item 9: Limited Access Privilege Program Report

*Presentation was given to the SSC discussing the results of the LAPP. An interest was expressed by a couple of SSC members to be involved in the developmental stage.*

#### Agenda Item 10: Snapper Grouper Amendment 16

*Gregg presented an overview of Amendment 16. Jack McGovern presented new information on values to be used to adjust effort for changes in fishing behavior in*

*response to closure due to quota being met. The SSC recommended he consult with the AP for a better indication of the values.*

*Discussion focused on issues associated with the requirement for dehooking and venting tools in Amendment 16. The SSC passed a motion requesting that this requirement be removed from the Amendment because of poor documentation of the benefits relative to those species outlined in 16. It was suggested by members of the SSC that this particular management measure be considered as a stand-alone amendment.*

*SSC endorsed Amendment 16 as best available science.*

#### Agenda Item 11: Snapper Grouper Amendment 17

*Without the time to vet this process, we were compelled to adopt an ad-hoc approach. Until NMFS or the Council provides the SSC with guidance on a process for establishing ABCs, the SSC is willing only to offer interim recommendations, since we cannot capture the uncertainty in factors such as stock assessment results, time lags in updating assessments, the degree of retrospective revision of assessment results, or projections.*

*We chose to tackle those species with the most information first. Given that a probabilistic approach had been applied to the data in the recent gag assessment, and that the approach has been peer-reviewed confidence in its use for determining the OFL and ABC levels was high. For those species that have been assessed but do not have probabilistic analyses associated with them, a motion was made for the SAFMC to request that those analyses be run and that these analyses be included as part of the terms of reference in future SEDAR assessments. These analyses are critical to the determination of ABCs in accounting for uncertainty.*

*For those assessed species, we developed an interim approach which set the OFL equal to the yield at MFMT (as outlined in the current rule) and the ABC equal to the yield at 75% F<sub>msy</sub> (the current proxy for F<sub>oy</sub>). Assuming the Council was to set the ACL equal to ABC, future management actions would be status quo.*

*For those data poor species identified in Amendment 17, we had landings. We attempted to develop an overarching procedure to be used for the four species, however, information from members indicated that fishery-independent projects indicated that speckled hind and Warsaw grouper were conspicuously absent from historical areas of catch. The group then decided to address the ABCs and OFL for the individual species. Because the OFL could not be determined, the incredibly small biomass for speckled hind and Warsaw and the high degree of uncertainty associated with these species, the group felt that any catch would likely result in overfishing of these stocks and therefore felt an ABC of zero was warranted.*



*Black and red groupers are not necessarily data-poor. The identified problem with these species was the lack of assessment. Because anecdotal evidence indicates that red are probably in a healthy state, the group used average landings over five years as a proxy for the OFL, setting the ABC slightly below the OFL was to account for uncertainty. There was less information relative to anecdotal status black grouper and as such, the ABC was set lower than that of red grouper.*

*There was considerable debate about these recommendations and a motion was drafted to rescind the motions for only the data-poor species. Concerns were expressed that the measures were inconsistent and/or were not conservative enough. After further debate and discussion, the motion failed from lack of support.*

*OFLs and ABCs were not recommended for the deep water or shallow water groups because of the lack of scientific basis for the groupings.*

*The SSC discussed and recommended a future meeting time for a more indepth discussion with the goal being the development of guidelines for establishing controls rules for setting OFLs and ABCs. Unfortunately, scheduling conflicts within the group did not allow for this. A motion was made to request that the Council allow for the SSC to have an additional day at the December meeting for further discussion.*

#### Agenda Item 12: SEDAR 15 Assessments

*The committee received presentations on the red snapper, greater amberjack and mutton snapper assessments. There were some clarification questions on red snapper, but no major concerns were expressed for any of the assessments. The SSC passed motions to accept all three assessments as based on the best available science.*

#### Agenda Item 13: Snapper Grouper Amendment 18

*Gregg provided a status report on the scoping document for Amendment 18. The SSC did not have any comments or suggestions at this time.*

#### Motions

### SG Amend 15B

1) Move that the flat top selectivity curve be used for conversion of the recreational allocation in weight to numbers for snowy grouper in amendment 15B. This would result in converting the 4400 lb allocation to 523 fish.

Barbieri/Crosson. Carried.

2) Move that the report of Dr Holiman on social and economic evaluation is accepted as best available science.

Motion by Whitehead/Larkin. Carried

3) Move that the SSC endorses Amendment 15B as based on best available science.

Barbieri/Chester. Carried.

THE SSC SUGGESTS ALTERNATIVE 3 REFLECTS THE BEST AVAILABLE SCIENCE FOR MONITORING BYCATCH IN SNAPPER GROUPE AMENDMENT 15B.

### Amendment 16

4) Move that, despite appreciation of the effort extended to address bycatch reduction in Amendment 16, the committee determines that the justification for measures as applied to the species addressed in Amendment 16 intended to reduce bycatch are deficient and strongly urges that language be included to clearly documents the effects of such measures.

Cooper/Williams. ( motion was substituted.)

5) Move to consider substitute motion (by Chester/Reichert). Motion to substitute carried.

Substitute Motion (4):

Move that, despite appreciation of the effort extended to address bycatch reduction in Amendment 16, the committee determines that the justification for measures as applied to the species addressed in Amendment 16 intended to reduce bycatch are deficient and strongly urges that language be included to clearly documents the effects of such measures.

Vote on the substitute motion: Carries.

5) Move that, with exception of items in approved motion regarding bycatch reduction, the committee determines that snapper-grouper Amendment 16 is based on the best available science.

Cooper/Barbieri. Carries.

Amendment 17

Chester/Lange Motion Carries.

6) Move to Recommend that Yield at MFMT applied to projected biomass=OFL, and yield at 75% Fmsy (current SAFMC default definition for Foy) applied to projected biomass = ABC, as a reasonable interim step to address the species in Amendment 17 and assessed through SEDAR. For gag grouper, for which a probabilistic examination of overfishing is available, establish an ABC consistent with the level adopted in December 2007. Given ACLs must be established annually, this interim approach will be reassessed each year.

Cooper/Barbieri. MOTION...CARRIES.

7) Move that the SSC recommend the SAFMC request the assessing organization for each SEDAR species perform a probabilistic analysis of overfishing for various catch levels

8) Move to set OFL equal to average landings over the last 5 years (2003-2007) and ABC=90% of OFL for those species in Amendment 17 which lack quantitative SEDAR assessments (red grouper, black grouper, speckled hind, warsaw grouper).

Gregory/Larkin. Failed.

9) Move to set ABC for Speckled Hind to 0 and to recommend that the OFL is unknown.

Williams/Chester. Carried.

10) Move to set ABC for Warsaw Grouper to 0 and to recommend that the OFL is unknown.

Williams/Reichert. Carried.

11) Move to set OFL for Red Grouper equal to average landings over the last 5 years (2003-2007) and ABC=95% of OFL.

Crosson/Gregory. Carried.

12) Move to set OFL for BLACK GROUPER equal to average landings over the last 5 years (2003-2007) and ABC=90% of OFL.

Crosson/Gregory. Carried.

13) Move to add black grouper and red grouper to the SEDAR assessment schedule ASAP. Recommend that white grunt be replaced by red grouper and hogfish be replaced by black grouper in SEDAR 19.

Buckel/Barbieri. Carried.

14) Move that there is no scientific basis for the shallow water and deep water species groupings proposed for amendment 17 and that the SSC cannot recommend OFL or ABC levels for the groupings.

Williams/Buckel. Carried.

Consent : Request guidance at next meeting for the ecosystem classification.

Tuesday, June 10.

Continue discussion on SG Amendment 17.

Move to consider next agenda item.

Crosson/None. Motion dies for lack of Second.

Move to revisit those species in amendment 17 having a SEDAR assessment, and to evaluate the uncertainty in the individual assessments to establish OFL and ABC recommendations. This shall be done in an SSC meeting prior to the September 2008 Council meeting.

Burgess/NONE. Motion dies for lack of second..

15) MOVE to hold an SSC meeting prior to the September 2008 Council meeting to revisit OFL and ABC recommendations for Amendment 17. The committee will evaluate uncertainty in individual assessments and the probability of overfishing at various exploitation levels for assessed stocks. The Committee will evaluate life history, fishery trends, and population dynamics information for the unassessed stocks. The Committee will develop OFL and ABC recommendations.

Burgess/Barbieri. Motion Carries.

16) Move that the ABC levels for amendment 17 set by the SSC in previous motions on Monday, June 9 2008, do not explicitly account for uncertainty in factors such as stock assessment results, time lags in updating assessments, the degree of retrospective revision of assessment results, nor projections.

Williams/Burgess. Carries.

17) Move to accept the SEDAR 15 red snapper assessment as the best available science

Buckel/Burgess Carried

18) Move to accept the Greater Amberjack assessment as best available science.

Burgess/Barbieri. Carries.

19) Move to accept the Mutton Snapper assessment as best available science.

Reichert/Cooper. Carries.

20) Move to rescind the OFL/ABC motions for red grouper and black grouper passed by the Committee on June 9.

Pollock/Williams. Motion Fails.

21) Move to rescind (motion 15 above, SSC meet pre Sept).

Burgess/Crosson. Carried.

22) Move that the SSC be allocated an extra day of meeting time at the December 2008 meeting to specifically address the OFL/ABC process. The SSC meeting should nonetheless start on Sunday afternoon like always.

Crosson/Burgess. Motion Carried.

Move to nominate Carolyn Belcher as chair elect.

Crosson/Reichert. Done.

Move to nominate Luiz Barbieri as vice chair elect.

Gregory/Crosson. Done.

Move to nominate Douglas Gregory as vice chair elect.

Barbieri/No Second



**SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL**

**SCIENTIFIC AND STATISTICAL COMMITTEE**

**Renaissance Orlando Hotel Airport  
Orlando, FL**

**June 8-10, 2008**

**INDEX OF MOTIONS**

PAGE 39: Move that the SSC approve the Spiny Lobster Import Amendment to go out for public hearing. Motion carried on Page 39.

PAGE 53: Move that the flattop selectivity curve be used for conversion of the recreational allocation in weight to numbers for snowy grouper in Amendment 15B. This would result in converting the 4,400 pound allocation to 523 fish. Motion carried on Page 55.

PAGE 55: Move that is the best available science. Motion carried on Page 55.

PAGE 58: Move that the SSC endorses Amendment 15B as based on best available science. Motion carried on Page 58.

PAGE 67: Motion that the SSC suggests to make Alternative 3 the preferred alternative. Motion reworded on Page 69: The SSC suggests Alternative 3 reflects the best available science for monitoring bycatch in Snapper Grouper Amendment 15B. Motion carried on Page 69.

PAGE 87: Move that despite appreciation of the effort extended to address bycatch reduction in Amendment 16, the committee determines that the measures intended to reduce bycatch mortality are not best available science due to a lack of analysis on the effectiveness of the proposed measures.

PAGE 91: Move a substitute motion to move despite appreciate of the effort extended to address bycatch reduction in Amendment 16, the committee determines that the justification for measures as applied to the species addressed in Amendment 16 intended to reduce bycatch are deficient and strongly urges that language be included to clearly document the effects of such measures. Substitute motion carried on Page 91. The substitute motion carried as the main motion on Page 91.

PAGE 92: With the exception of those points noted in the previous motion regarding the bycatch reduction section, we determine Amendment 16 is based on the best available science. Motion carried on Page 95.



PAGE 118: Move to recommend that yield at MFMT equal OFL and yield at 75 percent FMSY, which is the current SAFMC default definition for FOY equal to ABC as a reasonable interim step to address the species in Amendment 17 and assessed through SEDAR for gag grouper, for which a probabilistic examination of overfishing is available; establish an ABC consistent with the level adopted in December 2007.

ABOVE MOTION REWORDED ON PAGE 123: Move to recommend that yield at MFMT applied to projected biomass equal the OFL and yield at 75 percent FMSY, the current SAMFC default definition for FOY, applies to projected biomass equal ABC as a reasonable interim step to address the species in Amendment 17 and assessed through SEDAR. For gag grouper, for which a probabilistic examination of overfishing is available; establish an ABC consistent with the level adopted in December 2007. Given the ACLs must be established annually, this interim approach will be assessed each year. Motion carried on Page 123.

PAGE 123: Motion that the SSC recommends to the council that the council request the assessing organization for each of these SEDAR species, that they perform a probabilistic analysis to give us an estimate of the probability of various catch levels. Motion carried on Page 124.

PAGE 131: Move to set OFL equal to the average landings over the last five years for those species; and ABC equal to 90 percent of the OFL. Motion failed on Page 132.

PAGE 133: Move that we set the ABC level for speckled hind to zero. Motion reworded on Page 134: Move to set ABC for speckled hind to zero and to recommend that the OFL is unknown. Motion carried on Page 134.

PAGE 134: Move to set the ABC for warsaw grouper to zero and to recommend that the OFL is unknown. Motion carried on Page 135.

PAGE 136: This is for red grouper only – equal to average landings over those last five years, an ABC of 95 percent of OFL. Motion carried on Page 136.

PAGE 136: Move to set the OFL for black grouper equal to the landings over the last five years, 2003 through 2007, an ABC of 95 percent of the OFL. Motion reworded on Page 128: Move to set OFL for black grouper equal to average landings over the last five years, 2003 through 2007; and ABC to 90 percent of OFL. Motion carried on Page 141.

PAGE 143: Move to add black grouper and red grouper to the SEDAR assessment schedule ASAP; recommend that white grunt be replaced by red grouper; and hogfish be replaced by black grouper in SEDAR 19. Motion carried on Page 144.

PAGE 146: Move that there is no scientific basis for the shallow water and deep water species groupings proposed for Amendment 17 and that the SSC cannot recommend OFL or ABC levels for the grouping. Motion carried on Page 146.

PAGE 151: Move the acceptance of the report. Motion carried on Page 151.

PAGE 172: Move to hold an SSC meeting prior to the September 2008 council meeting to revisit OFL and ABC recommendations for Amendment 17. The committee will evaluate uncertainty in individual assessments and the probability of overfishing at various exploitation levels for assessed stocks. The committee will evaluate life history, fisheries trends and population dynamics' information for the unassessed stocks. The committee will develop OFL and ABC recommendations. Motion carried on Page 172.

PAGE 174: Move that the ABC levels for Amendment 17 set by the SSC in previous motions on Monday, June 9<sup>th</sup>, 2008, do not explicitly account for uncertainty in factors such as stock assessment results, time lags in updating assessments, the degree of retrospective revision of assessment results, nor projections. Motion carried on Page 174.

PAGE 184: Motion to approve the Red Snapper Stock Assessment as best available science. Motion carried on Page 184.

PAGE 190: Move that we accept the Greater Amberjack Assessment as best available science. Motion carried on Page 190.

PAGE 195: Motion to accept the SEDAR 15 as the best available science for mutton snapper. Motion carried on Page 195.

PAGE 223: Move that we rescind those two species, red grouper and black grouper, the recommendation from yesterday. Motion failed on Page 224.

PAGE 228: Move to rescind the motion to hold an SSC meeting prior to the September 2008 council meeting to revisit OFL and ABC recommendations for Amendment 17. Motion carried on Page 228.

PAGE 229: Move that the SSC be allocated an extra day of meeting time at the December 2008 meeting to specifically address the OFL/ABC process. The SSC meeting should, nonetheless, start on Sunday afternoon like always. Motion carried on Page 229.

## Scientific and Statistical Committee Meeting Report

Hilton Wilmington Riverside

301 North Water Street

Wilmington, NC

November 30 – December 3, 2008

### SSC SEDAR 16 Summary

The SSC approved the recent SEDAR 16 King Mackerel assessment as based on the best available science and advises that management measures be formulated in accordance with the base assessment model run. The SSC supports the conclusion of the review panel that the South Atlantic king mackerel stocks were not overfished. It is uncertain, however, whether overfishing is occurring in the South Atlantic stock or not, but if it is, it is occurring at a low level.

Discussion leading to this conclusion centered on three major topics that arose from the assessment and the SEDAR Review Panel report(s). First, the SSC focused on comments by the Review Panel where they concluded that the base model run was a plausible representation of the king mackerel population; however, the review panel also requested alternative model runs that were necessary to understand more fully the underlying uncertainty of the assessment. In particular, the model was very sensitive to specific fishery-dependent and independent abundance indices and their relative weighting schemes. For example, two alternative model runs were conducted with different treatments of the indices suggested by the Review Panel and resulted in substantially reduced probability of overfishing the stock at higher yields in comparison to the base run. The SSC believed that the base run provided more realistic results with respect to overfishing probabilities, and recommends that it be used as the basis for management. Second, and related to this point, the Review Panel recommended that decision tables be prepared to capture the uncertainty under various model scenarios. The SSC reviewed these tables (prepared by the assessment team) but commented that the Review Panel provided little guidance on how to compare alternative approaches to the base case. Third, the SSC discussed the failure of the Stock Synthesis 3 model to provide management benchmarks under the spatial constraints of the terms of reference. The Review Panel agreed that the Stock Synthesis 3 formulation allows both the Gulf and South Atlantic king mackerel stocks to be modeled while allowing mixing between the stocks during the winter. However, the SS3 model was ultimately not used because it was unclear whether the model was

converging and it was not possible to estimate stock-specific benchmarks as required by the terms of reference. Hence, the assessment proceeded using VPAs to independently model Gulf and South Atlantic migratory groups under a 50:50 mixing scenario. The SSC suggests that, in the future, if the two stocks are to be modeled separately, the SS3 model or another statistical

The SSC briefly discussed research recommendations arising from the SEDAR process and found them to be well-documented. In particular, the SSC believes that stronger fishery-independent abundance indices are needed to improve future assessments. In addition, the SSC agrees that a full assessment of king mackerel would benefit from better access to catch information from the Mexican fishery.

Motion to accept King Mackerel Assessment as based on best available science, and that the base model be used for management.

### ***Fishery Ecosystem Plan and Comprehensive Ecosystem***

Presentations were postponed as the SSC will have another chance to review these documents. Therefore, we did not have any discussion or recommendations relative to these items.

### ***Red Snapper Addendum***

An addendum to the red snapper stock assessment report was generated to address two issues. First, two values of annual recreational landings were transposed in the original assessment; these values were corrected with subsequent changes to landings in those and interpolated years. Secondly, the review panel requested that  $F_{40\%}$  be used as a proxy for  $F_{msy}$ . The review panel requested this change because the estimate of steepness in the base assessment was not estimated with confidence because it was hitting the upper bound. With this change, it was determined that the steepness associated with projections ( $h=0.68$  when using  $F_{40\%}$ ) differed from the base assessment leading to an abrupt change in recruitment between assessment years and projection years. Several alternatives to handle this inconsistency were provided to the SSC. These included changing all steepness in assessment and projections to 0.68, leaving them both at 0.95, and a hybrid where 0.95 was used for the assessment and 0.68 was used for projections. In accordance with previous decisions, the SSC chose to keep the estimate of steepness consistent between the model and the projections. Discussions then focused on two options for %SPR. One argued for following the suggestion from the CIE reviewers (using  $F_{40\%}$ ) and cited literature and examples that showed that  $F_{40\%}$  is more appropriate and  $F_{30\%}$  is too high. The other group argued that  $F_{30\%}$  should be considered because it was approved by the council for other species (approved by the Council in the Comprehensive SFA Amendment) and that its corresponding  $h$  value is approximately 0.90 which was close to the estimated value in the base estimation model. Although the CIE reviewers requested  $F_{40\%}$  be used as the  $F_{msy}$  proxy, they did not ask that the corresponding steepness be used in projections; they pointed out that there was large uncertainty in

projections and recommended that projections only be trusted for first few years because the stock-recruit relationship was not defined .

A motion was made to use F40% as the Fmsy proxy and retain the steepness of  $h=0.95$  for short term projection. This motion was accepted by SSC. The assessment team provided the updated base model ( $h=0.95$  in assessment and projections) with the new recreational landings to produce new projections.

### ***SEDAR 17 – Vermilion Snapper Assessment***

In its report the Review Panel supports the estimates from the AW base model. Estimates for 2007 are given below (see Table 3.6 of the AW report).

Year	$F$	$F / F_{MSY}$	$B$ (mt)	$B/B_{unfished}$	$SSB/SSB_{MSY}$	$SSB/MSST$
2007	0.49	1.27	2966	0.283	0.861	1.10

The SSC discussed the Review Panels conclusions and agreed that the base run was based on the BAS. As a result, the stock was not overfished, but was experiencing overfishing in 2007. However, the overfishing conclusion is highly uncertain due to a lack of robustness to key model assumptions.

The SSC noted that the Review Panel concluded that: “The methods used to characterize uncertainty were not considered entirely appropriate by the Panel. However, some guidance on the level of uncertainty can be obtained from the confidence intervals in the AW base model (Table 3.16 in the AW report) and the range of estimates from sensitivity runs (see Table 2.2.1 of this report). These results are likely to under-estimate the true level of uncertainty.”

This is despite the fact the Review Panel states that they “support[s] the estimates from the AW base model” including Tables 3.17–3.22 from the Assessment Workshop which give a range of ABC depending on the level of risk management wishes to adopt (Page 10 of the Review Workshop Summary Report).

The majority of the SSC’s discussion focused on the fit of the spawner-recruit curve (in particular, the estimate of steepness) and on the appropriateness of F40% versus F30% as a proxy for Fmsy. The value of the steepness parameter in the stock-recruit curve was estimated at the boundary of allowable values indicating that the parameter, and therefore the stock-recruit curve, was not estimable. The solution to this problem was to fix steepness at the value that coincides with the assumption that F40% = Fmsy. The SSC questioned whether this was the best solution to the problem and encouraged the assessment team to explore a range of alternative solutions to the problem in the future. In addition to the general approach of fixing steepness, concern was voiced over the assumption that F40% was the best proxy for

Fmsy. The consensus of the SSC was that F40% was an appropriate proxy for Fmsy based on Williams and Shertzer (2003) and scientific literature therein.

Motion: Move that the South Atlantic Vermilion snapper assessment be accepted as BAS, and supports the comments made by the review panel with regards to the large degree of uncertainty as to whether the stock is currently experiencing overfishing. (Passed)

### ***SEDAR 17 – Spanish Mackerel Assessment***

There was significant discussion about the review of the Spanish mackerel. The two major sources of uncertainty in the assessment are the historical recreational catches and the amount of mackerel bycatch in the shrimp fishery. Unfortunately, the uncertainty in these data cannot be decreased with additional research. The models must simply deal with this uncertainty. One way to assess the impact of some of this uncertainty is to conduct sensitivity runs. The point estimates for fishing mortality, biomass, Fmsy, and Bmsy were quite sensitive to the assumptions being examined via the sensitivity runs. However, the ratio of current fishing mortality to Fmsy appeared to be robust to the sensitivity runs performed in the Review Workshop and was in agreement with the results of the ASPIC biomass dynamic model. As such, it was determined that the stock was not experiencing overfishing. There was some question as to whether this robustness would hold over a wider range of sensitivity runs. The ratio of current biomass to Bmsy, however, was quite sensitive to the various runs, and as such, the model could not reliably determine whether the stock was overfished or not. There was some discussion as to the overall robustness of the ratios, but the SSC consensus was to agree with the findings of the Review Panel.

It was noted the even though the model could estimate the steepness parameter for the stock-recruit curve, the Review Panel expressed concern over its uncertainty. The SSC noted that we will likely never have precise estimates of such parameters and must make decisions despite this uncertainty.

The SSC briefly discussed research recommendations arising from the SEDAR process and found them to be well-documented. In particular, the SSC believes that stronger fishery-independent abundance indices are needed to improve future assessments.

### ***Snapper Grouper Amendment 17***

After a presentation on Amendment 17 and discussion with NMFS Regional Office staff, the SSC discussed their ability to provide ABCs with limited data. Discussion focused on whether or not we should fill in boxes for ABCs or wait for more information and guidance. If there is not enough information to give scientifically sound ABC value then management might stay status quo; the worry with this approach is that status quo might lead to overfishing. The SSC decided that it would wait until a tiered system was in place for ABCs.

The council provided the SSC with a list of questions; some of these questions (#'s 1-2) were addressed specifically while others (#'s 3-6) were addressed by a series of motions that removed the ABC recommendations from June 2008. Question 1A - For speckled hind and Warsaw grouper, the SSC clarified that the value of  $ABC=0$  was for directed landings only, not discards. Question 1B - There was discussion on whether or not discards should be included in ABC values for other species; the SSC concluded that discards would be handled on a case by case basis. Question 2 - Given that amendment 16 will likely reduce red and black grouper landings by ~35% we felt that these existing measures will likely provide adequate protection for black and red grouper. The SSC was concerned that the ABC values proposed in June 2008 for black and red grouper might be in conflict with the recommendations being developed under the tiered system. As such, the SSC withdraws the ABC and OFL levels for black and red grouper, and for similar reasons withdraws the ABC and OFL levels for gag grouper.

The conclusion that the SSC would wait until a tiered system was in place before providing ABC values for species with limited data influenced how questions 3 to 6 were addressed. There were several motions that addressed these questions. The SSC withdraws the ABC and OFL levels for golden tilefish established at the June meeting. The SSC withdraws the ABC and OFL levels recommended at the June, 2008 meeting for snowy grouper, black sea bass and red snapper, given that those species have rebuilding plans in place. The SSC recommends that the ABC levels for snowy grouper, black sea bass and red snapper be set consistent with the rebuilding plans for those species until they can be further amended on better scientific information. The SSC withdraws the ABC and OFL levels for vermilion snapper established at the June, 2008 meeting.

## **Questions for SSC Consideration regarding Amendment 17 fishing level recommendations**

**December 2008**

1. Discards. ABC was specified as 0 for speckled hind and Warsaw grouper and discards are not specifically addressed for other stocks
  - (A) How are discards considered for speckled hind and Warsaw grouper, or does the ABC apply to directed landings alone?
  - (B) The SSC made a general recommendation to set  $ABC=75\%$  Fmsy for those stocks which have been assessed. Is it the SSC's intent that discards are included in the MSY and ABC or that discards are addressed separately.
2. ABC was specified as 95% for red grouper and 90% for black grouper.
  - (A) The SSC stated in its June report "Because anecdotal evidence indicates that red are probably in a healthy state...". The SSC is asked to clarify the meaning of 'healthy state' given that both red grouper and black grouper are listed as overfishing and unknown with regard to overfished in the report to congress.
  - (B) What is the scientific basis for the difference in recommendations, given that both have the same status determinations?
  - (C) What is the scientific basis for providing a specific percentage of landings for ABC (and thus for preventing overfishing) given that the degree of overfishing and overfished has not been quantified, and what is the basis for establishing OFL at the average landings level given current stock status determinations?
3. There has been considerable discussion regarding the scientific basis for the recommendation of ABC at 75% Fmsy, both during and since the June meeting. There is concern that the recommendation could be considered arbitrary and without scientific basis. The SSC is asked to provide justification and clarification for this recommendation to address these concerns.
4. The Council approved a motion in September 2008 requesting that the SSC, SEFSC, & Staff evaluate a 25% (range of 10-50%) probability of overfishing when setting the ABC with respect to overfishing. This is an important part of ABC control rule development, so the committee is asked to comment to continue iterative deliberations with the Council.
  - (A) What is the next appropriate step in developing risk levels and an ABC control rule
  - (B) What should SSC be provided to provide guidance at the next meeting (in March/June)?
  - (C) Provide detailed guidance and instructions to SEFSC for appropriate analyses?
5. Stocks identified as overfished are managed through a rebuilding plan, therefore a general recommendation to set  $ABC = 75\%$  Fmsy may not work in these instances. The SSC is asked to clarify ABC for those stocks managed under rebuilding plans – snowy grouper, black sea bass, and red snapper. This could include reviewing existing rebuilding plans.,
6. The SSC received an assessment for vermilion snapper and updated results for red snapper. The SSC is asked to provide fishing level recommendations and ABC for these stocks in light of this new information.



## ***Motions***

### **MOTION 1**

Move to accept the king mackerel assessment as best available science, with management to be based on the base run of the model.

### **MOTION 2**

Move that the SSC accepts option #2 of a steepness of .95 to be used in assessment and projection estimates for red snapper in the south Atlantic.

### **MOTION 3**

Move that the South Atlantic Vermilion snapper assessment be accepted as best available science, and supports the comments made by the review panel with regards to the large degree of uncertainty as to whether the stock is currently experiencing overfishing.

### **MOTION 4**

Move that the SSC accepts the SEDAR 17 Spanish Mackerel stock assessment as best available science. The SSC concurs with the SEDAR 17 review panel's conclusion that the stock is not undergoing overfishing but that the model and underlying data are insufficient to make biomass-based determinations.

### **MOTION 5**

Move that the SSC withdraw the ABC and OFL levels for black grouper, red grouper and gag established at the June meeting.

### **MOTION 6**

MOVE that the SSC withdraw the ABC and OFL levels for golden tilefish established at the June meeting.

### **MOTION 7**

MOVE that the SSC withdraw the ABC and OFL levels recommended at the June, 2008 meeting for snowy grouper, black sea bass and red snapper, given that those species have rebuilding plans in place.

MOTION 8

Move that the SSC recommend that the ABC levels for snowy grouper, black sea bass and red snapper be set consistent with the rebuilding plans for those species until they can be further amended on better scientific information.

MOTION 9

Move that the SSC withdraw the ABC and OFL levels for vermilion snapper established at the June, 2008 meeting.

## **SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL**

### **SCIENTIFIC AND STATISTICAL COMMITTEE**

**Hilton Wilmington Riverside Hotel  
Wilmington, NC**

**November 30-December 3, 2008**

#### **INDEX OF MOTIONS**

PAGE 79: Motion to accept the stock assessment as the best available science and that the base run be considered the one used for management. Motion was carried on Page 80.

PAGE 115: Move that the SSC accepts Option Number 2 of a steepness of 0.95 to be used in assessment estimates and projection estimates for red snapper in the South Atlantic. Motion was carried on Page 118.

PAGE 137: Move that the South Atlantic Vermilion Snapper Assessment be accepted as best available science, but add to that that the issue of F 40 percent versus F 30 percent as benchmarks should be considered in the future for other assessments.

SUBSTITUTE MOTION, PAGE 138: Move that the South Atlantic Vermilion Snapper Assessment be accepted as best available science and supports the comments made by the review panel with regard to the large degree of uncertainty as to whether the stock is currently experiencing overfishing. Motion carries on Page 139.

PAGE 152: Move that the SSC accept the SEDAR 17 Spanish Mackerel Stock Assessment as best available science. This acceptance refers to the overfishing condition but not on the biomass status of the stock.

THE ABOVE MOTION REWORDED ON PAGE 157: Motion that the SSC accepts the SEDAR 17 Spanish Mackerel Stock Assessment as best available science. The SSC concurs with the SEDAR 17 Review Panel's conclusion that the stock is not undergoing overfishing but that the model and underlying data are insufficient to make biomass-based determinations. Motion carried on Page 161.

PAGE 224: Move that the SSC withdraw its recommendation on OFL and ABC levels for black grouper, gag grouper and red grouper established at the SSC June 2008 meeting. Motion carried on Page 225.

PAGE 228: Move that the SSC withdraw the ABC and OFL levels for golden tilefish established at the June meeting. Motion carried on Page 231.

PAGE 231: Move that the SSC withdraw the ABC and OFL levels for snowy grouper, black sea bass and red snapper given the fact that those species have rebuilding plans in place.

ABOVE MOTION REWORDED ON PAGE 236: Motion that the SSC withdraw the ABC and OFL levels recommended at the June 2008 meeting for snowy grouper, black sea bass and red snapper given that those species have rebuilding plans in place. Motion carried on Page 236.

PAGE 236: Move that the SSC replace ABC and OFL levels with those consistent under the rebuilding plans for snowy grouper, black sea bass and red snapper.

ABOVE MOTION REWORDED ON PAGE 238: Move that the SSC recommend that the ABC levels for snowy grouper, black sea bass and red snapper be set consistent with the rebuilding plans for those species until they can be further amended on better scientific information. Motion carried on Page 238.

PAGE 244: Move that the SSC withdraw the ABC and OFL levels recommended at the June 2008 meeting for vermilion snapper. Motion carried on Page 244.