
**CIE Reviewer's Report on the assessment for Gulf of Mexico
red grouper SEDAR 12 Review, 29 January-2 February 2007,
Atlanta, Georgia**

John Casey

Prepared for

University of Miami

Independent System for Peer review

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Contents

Executive summary	3
1. Background	4
2. Review activities	4
3. Findings	5
3.1 Findings in relation to specific terms of reference	5
3.1 General Statement	5
4. Bibliography of materials provided by CIE	9
Appendix 1: Review Workshop participants	11
Appendix 2: Review Workshop Terms of Reference	12
Appendix 3: Statement of work	13

Executive Summary

The SEDAR 12 review workshop was held at the Doubletree, Buckhead Hotel, 3342 Peachtree Road NE, Atlanta, GA 30326 from 1:00 p.m. on Monday, January 29, 2007 through 1.00 p.m. on Friday, February 2, 2007. The meeting was conducted in comfortable surroundings with excellent facilities and with a spirit of co-operation from all participants.

Overall the reports and documentation from the SEDAR 12 Data and Assessment workshops were impressively well presented and comprehensive. The participants of the data and assessment workshops are to be congratulated on an outstanding job in addressing the recommendations of previous reviews and in documenting all relevant supporting material. The presenters at the review meeting gave clear and informative presentations and took care to point out the details of concerns they had with either the data or the methods. They were also extremely accommodating and efficient in responding to the Review Panel's requests for additional analyses. From my perspective, the SEDAR review process worked extremely effectively and the organisation by the SEDAR Chair was first class. All participants have made a significant contribution to the success of the review process.

My findings and conclusions on the assessment are as follows:

The ASAP methodology used is appropriate for the assessment of Gulf of Mexico red grouper given the quality and availability of fishery-dependent and fishery-independent data. I am convinced that the 2006 assessment is more representative of the historic trends in the stock and fishery than the previous assessment conducted in 2002. Furthermore, I believe that the estimates of stock status in the most recent years derived from the 2006 assessment are representative and are sufficiently robust to form the basis for management decisions.

The stock in 2006 is estimated to be fully rebuilt and over-fishing is not occurring. The recent level of catch is consistent with maintaining this status.

I fully concur with all of the points included in the Review Panel's Consensus Report.

1. BACKGROUND

For an overview of the SEDAR process see Appendix 3 (Statement of work).

In accordance with the SEDAR review process, I was contracted by the CIE to participate as an independent review panellist for the 12th SEDAR (Gulf of Mexico red grouper) Review Workshop to contribute to the Review Panel's Consensus summary Report and to provide an independent report to the CIE on the validity, results, recommendations, and conclusions of the assessments. This is my independent report.

2. REVIEW ACTIVITIES

The SEDAR 12 review workshop was held in the Doubletree, Buckhead Hotel, 3342 Peachtree Road NE, Atlanta, GA 30326 from 1:00 p.m. on Monday, January 29, 2007 through 1.00 p.m. on Friday, February 2, 2007. Participants in the review workshop are listed in Appendix 1. The terms of reference are given in Appendix 2 and my statement of work is given in Appendix 3.

Prior to the Review Workshop, I was provided with draft stock assessment reports and web access to all relevant supporting documents and papers arising from the Data and Assessment Workshops (See Section 4, Bibliography). This gave me ample opportunity to gain a thorough understanding of the data and methods used for the assessments and to develop a preliminary list of points for discussion at the workshop.

The meeting was open to the public, and was attended by observers including members of the fishing industry. For each stock, the results of the assessments were presented to the Review Panel and other attendees, and the input data, assessment approach; results and utility of the findings for management were evaluated through open discussion. The Terms of Reference (Appendix 2) were reviewed to ensure they had been fully addressed. In the course of discussions, the Review Panel requested that additional analyses and evaluations be carried out by the Analysts present. The Panel recommended revisions to the assessment model configuration, and a modified assessment to that presented in the Assessment Workshop Report was eventually accepted by the Review Panel. The main output from the review is contained in the Review Panel's Consensus summary Report and the Assessment Advisory Report. I fully concur with the conclusions and recommendations contained in both of these reports.

3. FINDINGS

This section gives a summary of the main findings. Detailed discussions and recommendations are contained in the Review Panel's Consensus Report and the Advisory Report and are not repeated in detail here. I refer to each of the terms of Reference in turn.

3.1 Findings in relation to specific Terms of Reference

1. Evaluate the adequacy, appropriateness, and application of data used in the assessment.

Overall, the amount and quality of analyses undertaken by the data and assessment workshops and the supporting documentation was impressive and thorough. Any concerns I had were fully discussed by the Review Panel and have been incorporated into the Consensus Report.

2. Evaluate the adequacy, appropriateness, and application of the methods used to assess the populations; state whether or not the methods are scientifically sound.

The assessment used the age-structured assessment program (ASAP), which is both appropriate and adequate for the assessment. However the model could not be configured to deal with a time-series of data extending back to the late 19th century. The Review Panel's Consensus Report refers to more comprehensive and flexible models that are currently available and which may be better suited for future assessments of red grouper.

The panel agreed that four factors should be modified for the final accepted run of the base model;

- natural mortality
- trends in fishery catchability
- inclusion of the NMFS bottom long line survey
- a reduction in the influence of the derived discard age composition

The rationale for recommending each of these changes is explained in the Panel's Consensus Report. I have no additional points and consider that with these changes, the results from the ASAP are the most plausible representation of the stock of red grouper in the Gulf of Mexico available at this time.

3. Recommend appropriate estimates of stock abundance, biomass, and exploitation.

I concur with the results of the base run included in the Review Panel's advisory Report.

The Gulf of Mexico stock of red grouper in 2005 was not overfished and was not experiencing overfishing and can be considered to have recovered on the basis that the spawning stock is estimated to be in excess of B_{MSY} on 1 January 2005. It is important to note that the estimated increases in the spawning stock over the most recent 5 years are largely due to the presence in the population of two strong year-classes (1996 and 1999). There is little information in the assessment data on the strength of more recent year-classes. Hence the future trend in spawning stock at current levels of exploitation remains unknown.

4. Evaluate the adequacy, appropriateness, and application of the methods used to estimate stock status criteria (population benchmarks such as MSY , F_{msy} , B_{msy} , $MSST$, $MFMT$). State whether or not the methods are scientifically sound.

The estimates of population benchmarks and management parameters have been calculated using standard, routine procedures. These values are tabulated below:

Status Summary Table

Criteria	Value
SS_{MSY} (MT eggs)	591
SS_{2005} (MT eggs)	752
SS_{2005}/SS_{MSY}	1.27
$SS_{2005}/MSST$	1.48
F_{MSY} (MFMT)	0.21
F_{OY}	0.16
F_{2005}	0.16
$F_{2005}/MFMT$	0.73
F_{2005}/F_{OY}	0.97

While the procedures used are scientifically sound, the results may be sensitive to some of the assumptions used, especially the level of natural mortality and the stock-recruit relationship. I have a particular concern that the model chosen for the latter (Beverton-Holt) may be inappropriate for the Gulf of Mexico red grouper. There does not appear to have been much discussion at the data and assessment workshops on the form of the stock recruit relationship and intuitively the parameters of this stock-recruitment model are not precisely estimated, partly because the assessment model begins after historical fishing had already reduced the stock abundance. In addition, intuitively, I feel there is a need to explore whether a Ricker curve is more appropriate for red grouper where there is likely to be significant habitat limitation on recruitment and stock size. I suggest that this be further investigated before the next assessment.

5. Evaluate the adequacy, appropriateness, and application of the methods used to project future population status; recommend appropriate estimates of future stock condition (e.g., exploitation, abundance, biomass).

The methods used to project future population status are adequate and appropriate and are similar to those commonly used in many regions of the world. Furthermore, the results are adequate for providing technical advice for the management of the red grouper fishery. As for the determination of population benchmarks, the outcome of the forecast may be sensitive to the assumptions regarding recruitment, natural mortality and the shape of the stock recruit relationship. I note that because there is no information on the strength of recent year-classes. The forecast was undertaken assuming average recruitment since 2002, which may be in error.

The results of projections indicate that if fishing mortality and total removals are held at current levels, which are consistent with management at optimal yield (defined for this stock as $0.75 \cdot MSY$), the spawning stock will remain above SS_{MSY} and stabilize around its current level through to at least 2015. If F increases to F_{MSY} , the spawning stock is predicted to decline to SS_{MSY} levels by 2015. Fishing mortality is predicted to stabilize near the current level, which is just below F_{OY} if landings are maintained at either current or OY levels.

6. Evaluate the adequacy, appropriateness, and application of methods used to characterize uncertainty in estimated parameters. Provide measures of uncertainty for estimated parameters. Ensure that the implications of uncertainty in technical conclusions are clearly stated.*

The methods used to characterise uncertainty in estimated parameters are appropriate and adequate. The estimates of uncertainty routinely provided by the ASAP model output were supplemented with separate sensitivity analyses, and while uncertainty remains, I am confident that the results are sufficiently robust to form the basis for management decisions, especially since the current strategy of harvesting at F_{OY} provides a sufficiently comfortable buffer against uncertainty in the model estimates.

*7. Ensure that stock assessment results are clearly and accurately presented in the Stock Assessment Report and that reported results are consistent with Review Panel recommendations**.*

The Review Panel recommendations for alterations to the assessment Working groups base run were incorporated into the final base run. The results are incorporated in the Stock assessment Report and are consistent with the Panel's recommendations.

8. Evaluate the SEDAR process. Identify any Terms of Reference which were inadequately addressed by the Data or Assessment Workshops; identify any additional information or assistance which will improve Review Workshops; suggest improvements or identify aspects requiring clarification.

The process worked extremely well. All participants played an active and constructive part in proceedings and the organisational aspects were first class. I agree that dealing thoroughly with a single assessment was an advantage over attempting to review several stock assessments at the same time.

In addition to the comments in the Review Panel's Consensus Report I have only one further suggestion. I personally find it useful to have an overview of the fishery in a separate document. I suggest this should contain a historical description of trends in catches and effort by different gears, seasonal distribution of the stock and fishery by gear type or other significant unit; a table of changes in management measures, etc. Furthermore, I would also prefer that basic model inputs be presented in the form of tables. In particular I could not readily locate a table showing estimated landings and discards in number at age over time. Such a table can be quite informative and I would also suggest that such data undergo preliminary screening using a method such as separable VPA to look for consistency in the catch data.

9. Review the research recommendations provided by the Data and Assessment workshops and make any additional recommendations warranted. Clearly indicate the research and monitoring needs that may appreciably improve the reliability of future assessments. Recommend an appropriate interval for the next assessment.

3.2 General Statement

I agree with the findings and recommendations in the Review Panel's Consensus Report and have no further comments or recommendations.

4. Bibliography of materials provided for the SEDAR 12 Review

SEDAR 12 Gulf of Mexico Red Grouper Workshop Document List

Document #	Title	Authors
Documents Reviewed at the Data Workshop		
SEDAR12-DW1	The use of an otolith reference collection to monitor age reader precision for red grouper (<i>Epinephelus morio</i>)	Palmer, C. L., Farsky, R. A., Gardner, C., and Lombardi-Carlson, L. A.
SEDAR12-DW2	Bottom longline fishery bycatch of red grouper from observer data	Hale, L.
SEDAR12-DW3	Temporal and spatial trends in red grouper (<i>Epinephelus morio</i>) age and growth from the northeastern Gulf of Mexico: 1979-2005	Lombardi-Carlson, L., C. Palmer, C. Gardner and B. Farsky
SEDAR12-DW4	An update of Gulf of Mexico red grouper reproductive data and parameters for SEDAR 12	Fitzhugh, G.R., H.M. Lyon, W.T. Walling, C.F. Levins, and L.A. Lombardi-Carlson
SEDAR12-DW5	Catch rates, distribution and size/age composition of red grouper, <i>Epinephelus morio</i> , collected during NOAA Fisheries Bottom Longline Surveys from the U.S. Gulf of Mexico	Ingram, W., M. Grace, L. Lombardi-Carlson and T. Henwood
SEDAR12-DW6	SEAMAP Reef Fish Survey of Offshore Banks: Yearly Indices of Abundance for red grouper (<i>Epinephelus morio</i>)	Gledhill, C. T., G. W. Ingram, Jr., K. R. Rademacher, P. Felts, B. Trigg, and L. Lombardi-Carlson
SEDAR12-DW7	Research Trawl and Shrimp Bycatch Results Relevant to Red Grouper	Nicholls, S.
SEDAR12-DW8	Spatial and temporal patterns in demographics and catch rates of red grouper from a fishery-independent trap survey in the northeast Gulf of Mexico, 2004-2005	De Vries, D.
SEDAR12-DW9	Length frequency distributions for red groupers caught by commercial fisheries in the Gulf of Mexico from 1984 to 2005	Chih, C-P.
SEDAR12-DW10	Selected sampling issues regarding the length/age frequency distributions of red groupers caught by commercial fisheries in the Gulf of Mexico from 1984 to 2005	Chih, C-P.
SEDAR12-DW11	Quantitative Historical Analysis of the United States and Cuban Gulf of Mexico Red Grouper Commercial Fishery	Saul, S.
SEDAR12-DW12	Length Frequency Analysis of the Gulf of Mexico Recreational Red Grouper Fishery	Saul, S.
SEDAR12-DW-13	Trends in Red Grouper Mortality Rates Estimated from Tag Recaptures (1990-2006)	Porch, C. E.
SEDAR12-DW-14	Recreational Survey Data for Red Grouper in the Gulf of Mexico	Matter, V. M.
SEDAR12-DW-15	Backcalculation of recreational catch of red grouper from 1945 to 1985	Walter, J. F.
SEDAR12-DW-16	Standardized catch rates for red grouper from the United States Gulf of Mexico handline, longline, and trap fisheries, 1990-2005	McCarthy, K. and S. Cass-Calay
SEDAR12-DW-17	Calculated red grouper discards by vessels with Federal permits in the Gulf of Mexico.	McCarthy, K.
ASSESSMENT WORKSHOP DOCUMENTS		
SEDAR12-AW01	<<< NOT USED >>>>	
SEDAR12-AW02	STANDARDIZED CATCH RATES OF RED GROUPEL (/EPINEPHELUS MORIO/) FROM THE U.S. HEADBOAT FISHERY IN THE GULF OF MEXICO, 1986-2005. SFD-2006-036.	Cass-Calay, S

SEDAR12-AW03	STANDARDIZED CATCH RATES OF RED GROUPER (/EPINEPHELUS MORIO/) FROM THE U.S. RECREATIONAL FISHERY IN THE GULF OF MEXICO, 1986-2005. SFD-2006-037.	Cass-Calay, S
SEDAR12-AW04	Discard Calculations	McCarthy, K.
SEDAR12-AW05	Construction of a fisheries independent index of red grouper using data from the Dry Tortugas National Park, 1994-2004	anon
SEDAR12-AW06	Derived and observed catch at age from the Gulf of Mexico red grouper stock	Nowlis, J. S. & 5 co-authors
SEDAR12-AW07	Age data evaluation	Lombardi-Carlson, L
SEDAR12-AW08	Comparison of ALK and RAS methods for deriving age frequency distributions of red grouper caught by commercial fisheries in the Gulf of Mexico	Chih, C-P.
	REVIEW WORKSHOP DOCUMENTS	
SEDAR12-RW01	Gulf Council RFSAP report excerpts regarding red grouper assessments, 1999-2002.	anon.
SEDAR12-RW02		
	Reference Documents	
SEDAR12-RD01 2006 FishBull 104:343-349	Depredation of catch by bottlenose dolphins (<i>Tursiops truncatus</i>) in the Florida king mackerel (<i>Scomberomorus cavalla</i>) troll fishery.	Zollet, E. A. and A. J. Read
SEDAR12-RD02 2002 SFD-01/02-175rev	Draft status of red grouper in United States waters of the Gulf of Mexico during 1986-2001	SEFSC anon
SEDAR12-RD03 2002 PCL Cont. 2002-06	Red Grouper age-length structure and description of growth from the eastern Gulf of Mexico: 1992-2001	Lombardi-Carlson, L. A., G. R. Fitzhugh, and J. J. Mikulas
SEDAR12-RD04 1991 SFD 90/91-86	The red grouper fishery of the Gulf of Mexico	Goodyear, C. P., and M. J. Schirripa
SEDAR12-RD05 1999 SFD 98/99-56	The red grouper fishery of the Gulf of Mexico: Assessment 3.0	Schirripa, M. J., C. M. Legault, and M. Ortiz.
SEDAR12-RD06 ICCAT SCRS/1998/058	A flexible forward age-structured assessment program	Legault, C. M. and V. R. Restrepo
SEDAR12-RD07 MIA 92/93-75. 1993.	The red grouper fishery of the Gulf of Mexico.	Goodyear, C. P. and M. J. Schirripa.
SEDAR12-RD08 MIA 93/94-60. 1994	Biological reference points for red grouper: uncertainty about growth.	Goodyear, C. P
SEDAR12-RD09 SFD 98/99-57 1999	Trends in red grouper mortality rate estimated from tagging data	Legault et al
SEDAR12-RD10 unpub. SEFSC manu. no date	Red grouper mean size at age: An evaluation of sampling strategies using simulated data	Goodyear, C. P.
SEDAR12-RD11		
SEDAR12-RD12		
SEDAR12-RD13		

Appendix 1: Participants in the SEDAR 12 Review workshop

1.1.1 Participants

Affiliation E-mail

Review Panel:

Richard Methot Chair/NOAA Fisheries NWFSC
John Casey CIE/CEFAS
Stewart Frusher CIE/University of Tasmania
Paul Medley CIE

Council Appointed Observers

Martin Fisher GMFMC AP
Bob Muller GMFMC FSAP/FL FWC
Dennis O'Hearn GMFMC AP

Analytical Team

Craig Brown NOAA Fisheries SEFSC
Shannon Cass-Calay NOAA Fisheries SEFSC
Steve Turner NOAA Fisheries SEFSC
John Walter NOAA Fisheries SEFSC

Council Representative

William Teehan GMFMC/ FL FWC

SERO Representative

Andy Strelcheck NOAA Fisheries SERO

Observers

Mark Robson SAFMC/ FL FWC
Jim Weinberg NOAA Fisheries NEFSC

Staff

John Carmichael SEDAR Coordinator
Tyree Davis IT Support/SEFSC
Stu Kennedy GMFMC
Tina Trezza GMFMC

Appendix 2: SEDAR 12 Review Workshop Terms of Reference:

1. Evaluate the adequacy, appropriateness, and application of data used in the assessment.
2. Evaluate the adequacy, appropriateness, and application of methods used to assess the stock.
3. Recommend appropriate estimates of stock abundance, biomass, and exploitation.
4. Evaluate the methods used to estimate population benchmarks and management parameters (*e.g.*, *MSY*, *Fmsy*, *Bmsy*, *MSST*, *MFMT*, or *their proxies*); provide values for management benchmarks, a range of Allowable Biological Catches (ABC), and declarations of stock status.
5. Evaluate the adequacy, appropriateness, and application of the methods used to project future population status; recommend appropriate estimates of future stock condition.
6. Ensure that reported results are consistent with Review Panel recommendations; recommend additional documentation as appropriate.
7. Evaluate the SEDAR Process. Review performance of the Data and Assessment Workshops with regard to their respective Terms of Reference; state whether or not the Terms of Reference for those previous workshops were met and are adequately addressed in the Stock Assessment Report; suggest any changes or improvements to the process.
8. Review research recommendations provided by the Data and Assessment workshops and make any additional recommendations warranted.
9. Prepare a Peer Review Consensus Summary summarizing the Panel's evaluation of the stock assessment and addressing each Term of Reference. Prepare an Advisory Report summarizing key assessment results. (Reports to be drafted by the Panel during the review workshop. Contents of these reports are described in Annex I. Final drafts are due to the Chair within 2 weeks (February 16, 2007). Final reports are due to the SEDAR Coordinator one week later (February 23, 2006).

NOTE: These Terms of Reference may be modified prior to the Review Workshop. Final Terms of Reference will be provided to the Reviewers with the workshop briefing materials.

Appendix 3: Statement of Work

Subcontract between the University of Miami and CEFAS (Dr. John Casey)

January 5, 2007

SEDAR 12 Stock Assessment Review Gulf of Mexico Red Grouper January 29 - February 2, 2007 Atlanta, Georgia

SEDAR Overview:

South East Data, Assessment, and Review (SEDAR) is a process for fisheries stock assessment development and review conducted by the South Atlantic, Gulf of Mexico, and Caribbean Fishery Management Councils; NOAA Fisheries Southeast Fisheries Science Center (SEFSC) and Southeast Regional Office (SERO); and the Atlantic and Gulf States Marine Fisheries Commissions. SEDAR is organized around three workshops: data, assessment, and review. Input data are compiled during the data workshop, population models are developed during the assessment workshop, and an independent peer review of the data, assessment models, and results is provided by the review workshop. SEDAR documents include working papers prepared for each workshop, supporting reference documents, and a SEDAR Stock Assessment Report. The SEDAR Stock Assessment Report consists of a data report produced by the data workshop, a stock assessment report produced by the assessment workshop, and a peer review Consensus report and advisory report prepared by the review workshop.

SEDAR is a public process conducted by the Fishery Management Councils in the Southeast US. All workshops, including the review, are open to the public and noticed in the Federal Register. All documents prepared for SEDAR are freely distributed to the public upon request and posted to the publicly accessible SEDAR website. Public comment during SEDAR workshops is taken on an 'as needed' basis; the workshop chair is allowed discretion to recognize the public and solicit comment as appropriate during panel deliberations. The names of all participants, including those on the Review Panel, are revealed.

The review workshop provides an independent peer review of SEDAR stock assessments. The term review is applied broadly, as the review panel may request additional analyses, correction of errors, and sensitivity runs of the assessment model provided by the assessment workshop. The review panel is ultimately responsible for ensuring that the best possible assessment is provided through the SEDAR process. The review panel task is specified in Terms of Reference.

The SEDAR 12 review panel will be composed of three Center for Independent Experts (CIE)-appointed reviewers and a chair appointed by the SEFSC director. Council staff, Council members, and Council AP and SSC members will attend as observers. Members of the public may attend SEDAR review workshops.

CIE Request:

NMFS-SEFSC requests the assistance of three fisheries assessment scientists from the CIE to serve as technical reviewers for the SEDAR 12 review panel that will consider the assessment of Gulf of Mexico red grouper. Reviewer tasks are listed below.

The red grouper stock assessed through SEDAR 12 is within the jurisdiction of the Gulf of Mexico Fishery Management Council and respective southeastern states.

The review workshop will take place at the Doubletree Buckhead Atlanta in Atlanta, GA, from 1:00 p.m. Monday, January 29, 2007 through 1:00 p.m. Friday, February 2, 2007.

Meeting materials will be forwarded electronically to review panel participants and made available through the internet (<http://www.sefsc.noaa.gov/sedar/>); printed copies of any documents are available by request. The names of reviewers will be included in workshop briefing materials.

Please contact John Carmichael (SEDAR Program Manager; 843-571-4366 or John.Carmichael@safmc.net) for additional details.

Hotel arrangements:

Doubletree Buckhead
3342 Peachtree Road NE
Atlanta, GA 30326
(800) 222-8733; (404) 231-1234
FAX (404) 231-5236

Group Rate \$115 + 15% tax (\$17.25) = \$132.25; guaranteed through Monday, January 8, 2007

SEDAR Review Workshop Panel Tasks:

The SEDAR 12 Review Workshop Panel will evaluate the assessment of Gulf of Mexico red grouper (see attached agenda). During the evaluation the panel will consider input data, assessment methods, and model results. The evaluation will be guided by Terms of Reference that are specified in advance. The Review Workshop panel will document its findings in a Peer Review Consensus Summary and summarize assessment results in a Peer Review Advisory Report (Annex I). These documents are products of the SEDAR review panel, but are NOT products of the CIE. Separate CIE reviewer reports will also be produced, as described in Annex II, to provide distinct, independent analyses of the technical issues and of the SEDAR 12 process.

SEDAR Review Workshop Panel Supplementary Instructions

The review panel Chair is responsible for conducting the meeting during the workshop in an orderly fashion. The Chair is responsible for compiling and editing the Peer Review Consensus Summary and Peer Review Advisory Report for each species assessed and submitting them to the SEDAR Coordinator by a deadline specified by the SEDAR Steering Committee.

Review panel reviewers are responsible for reviewing documents prior to the workshop, participating in workshop discussions addressing the terms of reference, preparing assessment summaries and consensus reports during the workshop, and finalizing SEDAR documents within two weeks of the conclusion of the workshop. Each reviewer appointed by the CIE is responsible for preparing an additional CIE Reviewer Report as described in Annex II.

The Chair and SEDAR Coordinator will appoint one panelist to serve as assessment leader for the review. The leader will be responsible for providing an initial draft of consensus and advisory report text for consideration by the panel. However, as stated above, all panelists are expected to participate in preparation of report text.

The Review Panel's primary responsibility is to ensure that assessment results are based on sound science, appropriate methods, and appropriate data. During the course of the review, the panel is allowed limited flexibility to deviate from the assessment provided by the Assessment Workshop. This flexibility may include modifying the assessment configuration and assumptions, requesting a reasonable number of sensitivity runs, requesting additional details and results of the existing assessments, or requesting correction of any errors identified. However, the allowance for flexibility is limited, and the review panel is not authorized to conduct an alternative assessment or to request an alternative assessment from the technical staff present. The Review Panel is responsible for applying its collective judgment in determining whether proposed changes and corrections to the presented assessment are sufficient to constitute an alternative assessment. The Review Panel Chair will coordinate with the technical staff present to determine which requests can be accomplished and prioritize desired analyses.

Any changes in assessment results stemming from modifications or corrections solicited by the review panel will be documented in an addendum to the assessment report. If updated estimates are not available for review by the

conclusion of the workshop, the review panel shall agree to a process for reviewing the final results.

The review panel should not provide specific management advice. Such advice will be provided by existing Council Committees, such as the Science and Statistical Committee and Advisory Panels, following completion of the assessment.

If the Review Panel finds an assessment deficient to the extent that technical staff present cannot correct the deficiencies during the course of the workshop, or the Panel deems that desired modifications would result in a new assessment, then the Review Panel shall provide in writing the required remedial measures, including an appropriate approach for correcting and subsequently reviewing the assessment.

Statement of Tasks for CIE Reviewers:

Roles and responsibilities:

1. Approximately 3 weeks prior to the meeting, the CIE reviewers shall be provided with the stock assessment reports, associated supporting documents, and review workshop instructions including the Terms of Reference. Reviewers shall read these documents to gain an in-depth understanding of the stock assessment, the resources and information considered in the assessment, and their responsibilities as reviewers.
2. During the Review Panel meeting, reviewers shall participate in panel discussions on assessment methods, data, validity, results, recommendations, and conclusions as guided by the Terms of Reference. The reviewers also shall participate in the development of a Peer Review Consensus Summary report and the Peer Review Advisory Reports, as described in Annex I. Reviewers may be asked to serve as an assessment leader during the review to facilitate preparing first drafts of review reports.
3. Following the Review Panel meeting, the reviewers shall work with the chair to complete and review the Peer Review Panel Reports. Reports shall be completed, reviewed by all 3 panelists, and comments submitted to the Chair by February 16, 2007.
4. Following the Review Panel meeting, each reviewer shall prepare an individual CIE Reviewer Report. These reports shall be submitted to the CIE no later than February 23, 2007, addressed to the "University of Miami Independent System for Peer Review," and sent to Dr. David Sampson, via email to David.Sampson@oregonstate.edu, and to Mr. Manoj Shivlani, via email to mshivlani@rsmas.miami.edu. See Annex II for complete details on the report outline.

The duties of each Review Panelist shall occupy a maximum of 12 workdays; several days prior to the meeting for document review; five days at the SEDAR meeting, and several days following the meeting to ensure that final review comments on documents are provided to the Chair and to complete a CIE review report.

Workshop Final Reports:

The SEDAR Coordinator will send copies of the final Review Panel Consensus Report and Advisory Report to Mr. Manoj Shivlani at the CIE.

1.1 Submission and Acceptance of CIE Reports:

The CIE shall provide via e-mail the individual CIE Reviewer Reports to the COTR, Dr. Stephen Brown (stephen.k.brown@noaa.gov) for review and approval, based on compliance with this Statement of Work, by March 9, 2007. The COTR shall notify the CIE via e-mail regarding acceptance of the reports within two working days of receipt. Within two working days of the COTR's

approval, the CIE shall provide the final individual CIE Reviewer Reports to the COTR in pdf format.

The COTR shall provide the final CIE Reviewer Reports to:

SEFSC Director: Alex Chester (Acting), NMFS Southeast Fisheries Science Center, 75 Virginia Beach Drive, Miami, FL 33149 (email, Alex.Chester@noaa.gov)

SEDAR Program Manager: John Carmichael, SAFMC, One Southpark Circle, Suite 306, Charleston, SC 29407 (email, John.Carmichael@safmc.net)

Gulf of Mexico Fishery Management Council: Wayne Swingle, Executive Director, GMFMC, 2203 N. Lois Avenue, Suite 1100, Tampa, FL 33607 (email (Wayne.Swingle@gulfcouncil.org))

For Additional Information or Emergency:

SEDAR contact: John Carmichael, One Southpark Circle, Suite 306, Charleston, SC 29407. Phone: 843-571-4366; cell phone (843) 224-4559. Email: John.Carmichael@safmc.net.

Draft Agenda

1.1.2 SEDAR 12: Gulf of Mexico Red Grouper January 29 - February 2, 2007

Monday

1:00 p.m. 1:00 – 1:30	Convene Introductions and Opening Remarks Coordinator <i>- Agenda Review, TOR, Task Assignments</i>	
1:30 – 3:30	Assessment Data Presentation	TBD
3:30 – 4:00	Break	
4:00 – 6:00	Continue Presentation/Discussion <i>- Data</i>	Chair

Tuesday

8:30 a.m. – 11:30 a.m.	Assessment Presentation	Chair
11:30 a.m. – 1:30 p.m.	Lunch Break	
1:30 p.m. – 3:30 p.m.	Panel Discussion <i>- Assessment Methods</i> <i>- identify additional analyses, sensitivities, corrections</i>	TBD
3:30 p.m. – 4:00 p.m.	Break	
4:00 p.m. – 6:00 p.m.	Panel Discussion <i>- Continue deliberations</i> <i>- Review additional analyses</i>	Chair

Tuesday Goals: Initial presentation completed, sensitivities and modifications identified.

Wednesday

8:30 a.m. – 11:30 a.m.	Panel Discussion <i>- Review additional analyses, sensitivities</i> <i>- Consensus recommendations and comments</i>	Chair
11:30 a.m. – 1:30 p.m.	Lunch Break	
1:30 p.m. – 3:30 p.m.	Panel Discussion	TBD
3:30 p.m. – 4:00 p.m.	Break	
4:00 p.m. – 6:00 p.m.	Panel Discussion	Chair

Wednesday Goals: Final sensitivities identified, Preferred models selected, Projection approaches approved, Consensus report drafts begun

Thursday

8:30 a.m. – 11:30 a.m.	Panel Discussion <i>- Final sensitivities reviewed.</i> <i>- Projections reviewed.</i>	Chair
11:30 a.m. – 1:30 p.m.	Lunch Break	
1:30 p.m. – 3:30 p.m.	Panel Discussion or Work Session	Chair
3:30 p.m. - 4:00 p.m.	Break	
4:00 p.m. - 6:00 p.m.	Panel Work Session <i>- Review Consensus Reports</i> <i>- Discuss Advisory Reports Contents</i>	Chair

Thursday Goals: Complete assessment work and discussions. Final results available. Drafts of Consensus Reports and Advisory Reports Reviewed.

Friday

8:30 a.m. – 1:00 p.m.	Panel Work Session	Chair
1:00 p.m.	ADJOURN	

Annex I. SEDAR Review Workshop Document Contents

Consensus Summary Outline

I. Terms of Reference

List each Term of Reference, and include a summary of the Panel discussion regarding the particular item. Include a clear statement indicating whether or not the criteria in the Term of Reference are satisfied.

II. Further Analyses and Evaluations

Summary and findings of review panel analytical requests not previously addressed in Term of Reference discussion above.

III. Additional Comments

Provide a summary of any additional discussions not captured in the Terms of Reference statements.

IV. Recommendations for Future Workshops

Panelists are encouraged to provide general suggestions to improve the SEDAR process.

V. CIE Reviewer Statements

Each individual reviewer provided by the CIE shall provide a statement attesting whether or not the contents of the Consensus Report provides an accurate and complete summary of their views on the issues covered in the review, including for all the Terms of Reference. Reviewers may also make any additional individual comments or suggestions desired.

Advisory Report Outline

Stock Distribution and Identification

Summary of the unit stock and its geographic distribution.

Assessment Methods

Summary of the assessment method.

Assessment Data

Summary of input data sources.

Catch Trends

Summary of catches by fishery

Fishing Mortality Trends

Summary of fishing mortality estimates

Stock Abundance and Biomass Trends

Summary of abundance, biomass, and recruitment

Status Determination Criteria

Summary of SFA and management criteria.

Stock Status

Declaration of stock status.

Projections

Summary of stock projections.

Special Comments

Additional comments of importance

Sources of Information

Source of results contained in advisory report (i.e., workshop report or addendum)

Tables:

Catch and Status

The Catch and Status table summarizes recent stock and fishery conditions. Items listed in the table typically include: catch and discards by fishery sector, fishing mortality estimates, stock abundance and biomass, spawning stock biomass, recruitment, and stock status relative to benchmark values (e.g., F/F_{msy} , B/B_{msy}). Values will be provided by the analytical team.

Stock Status Criteria

Summary of recommended or mandated benchmarks and estimated values.

FIGURES:

- 1. Landings*
- 2. Exploitation*
- 3. Stock Biomass*
- 4. Stock-Recruitment*
- 5. Control Rule*
- 6. Projections*

ANNEX II: Contents of CIE Reviewer Reports

1. The reviewer reports shall be prefaced with an executive summary of findings and/or recommendations.
2. The main body of the reviewer reports shall consist of a background, description of review activities, summary of findings, and conclusions/recommendations. Reviewers are encouraged to elaborate on any points raised in the Consensus Summary Report that they feel might require further clarification. Reviewers are also encouraged to provide any criticisms and suggestions for improvement of the SEDAR process.
3. The reviewer report shall include as separate appendices a copy of the CIE Statement of Work and a bibliography that includes all materials provided for review.

Please refer to the following website for additional information on report generation:
<http://www.rsmas.miami.edu/groups/cie>.

Budget

To cover all salary and expenses to a maximum of \$11,660.