

***SEDAR* Guidelines**

SouthEast Data, Assessment, and Review

Cooperative Stock Assessment Development Program of:

NOAA Fisheries Southeast Fisheries Science Center

NOAA Fisheries Southeast Regional Office

South Atlantic Fishery Management Council

Gulf of Mexico Fishery Management Council

Caribbean Fishery Management Council

Atlantic States Marine Fisheries Commission

Gulf States Marine Fisheries Commission

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SEDAR

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1. Introduction

SouthEast Data, Assessment, and Review (SEDAR) is a cooperative Fishery Management Council process initiated to improve the quality and reliability of assessments of fishery resources in the southeastern United States, including the South Atlantic, Gulf of Mexico, and US Caribbean. SEDAR is managed by the three Regional Fishery Management Councils in the Southeast in coordination with NOAA Fisheries and the Interstate Fishery Commissions (ASMFC and GSMFC). SEDAR seeks to improve the quality and reliability of stock assessments, improve the quantitative basis of fishery management actions, and increase the relevance of research and monitoring programs in the Southeast Region. SEDAR incorporates a multi-year planning cycle to facilitate timely data collection and sample preparation, population dynamics model development, and stock evaluation exercises. This document describes SEDAR, specifies how the SEDAR process relates to existing Council and Commission Committees, and provides operational guidelines.

SEDAR places special emphasis on increasing constituent and stakeholder participation in assessment development and ensuring a rigorous and independent scientific review of completed stock assessments. SEDAR goals are to improve the quality of stock assessment products for the Southeast Region, increase and broaden participation in generating stock assessments, and provide managers and constituents greater understanding of, and confidence in, assessment results. Primary changes from the past assessment development process include the addition of a Data Workshop which involves many participants representing various disciplines and interests and a Review Workshop which provides an independent peer review. These additional workshops and broader participation increase time demands on federal and state agencies as well as constituent representatives. Although SEDAR places less burden and responsibility on specific individuals in developing complete stock assessments, it increases the burden and responsibility on the collective assessment and technical expertise of the region to generate, verify, and review the many pieces that contribute to an assessment. To this end, those appointed to SEDAR panels are expected to be true participants and contribute analyses and report text in addition to comment and critique.

SEDAR stock assessments are prepared during a cycle consisting of three separate and sequential workshops:

- 1) The Data Workshop -- involves the assembly and review of all available fishery data and life history information, resulting in consensus databases to be used in stock assessments. Analytical techniques and models appropriate for the available data are also suggested.
- 2) The Assessment Workshop -- data sets from the Data Workshop are used with population dynamics modeling techniques to determine the status of stocks; and
- 3) Review Workshop -- a scientific peer review of the stock assessment by independent peers.

The product of SEDAR is a stock assessment report to a Council or Commission. SEDAR assessment reports are analogous to the assessment reports previously prepared by Council Assessment Panels and NOAA Fisheries as outlined under some framework procedures. The final assessment report must specify management parameters required under the Magnuson-Stevens Act, Council FMP's, or framework procedures; document the activities and opinions of all SEDAR workshops; and provide values of population parameters and management benchmarks required to evaluate stock status. Specific parameters to be provided by an assessment are listed in the Terms of Reference developed for each SEDAR Workshop. Each Council will modify their framework procedures to replace the appropriate assessment panel (or other groups) actions with the Council/NOAA Fisheries SEDAR process actions.

2. Oversight and Administration

2.1 Oversight

The Steering Committee is composed of the NOAA Fisheries Southeast Science Center Director; NOAA Fisheries Southeast Regional Administrator; Executive Directors of the South Atlantic, Gulf of Mexico and Caribbean Fishery Management Councils; Chairs of the South Atlantic, Gulf of Mexico and Caribbean Fishery Management Councils; and the Executive Directors of the Atlantic and Gulf States Marine Fisheries Commissions. Designees may attend Steering Committee meetings in place of these individuals. The Steering Committee shall elect a chair from the membership.

Policy decisions, approval of SEDAR guidelines, determination of species to be assessed, and assessment cycle timing are established by the SEDAR Steering Committee. The SEDAR Steering Committee will meet at least twice annually to schedule specific species that will be assessed through the SEDAR process and consider any other issues associated with the SEDAR process. Assessments are scheduled a minimum of three years in advance and potential species are identified out several additional years. Such long-term advanced planning is intended to allow researchers to develop updated inputs and assess appropriate techniques and models for use in assessments. The committee also reviews progress on SEDAR assessments and recommends modifications of the SEDAR Process. The SEDAR coordinator and staff provide support for steering committee activities.

2.2 Administration

The South Atlantic Council is funded by the SEFSC to administer the SEDAR process for the southeast region. The South Atlantic Council hired a SEDAR coordinator and provides administrative support. SEDAR staff is responsible for the administrative duties of SEDAR, with administrative assistance provided by South Atlantic Council administrative staff for duties such as lodging and meeting contracts, travel reimbursements under the SEDAR grant, meeting support, and meeting materials distribution. The SEDAR Coordinator chairs the data and assessment workshops and supports the review workshops. Scheduling of SEDAR workshops, developing attendee lists, and making arrangements for workshops is done collaboratively by SEDAR staff, the associated council for the given SEDAR cycle, and the SEDAR Steering Committee.

Each Steering Committee member designates a staff person responsible for ensuring appointments to SEDAR panels are made promptly and that their participants meet deadlines. Each Council establishes guidelines and procedures for appointing individuals from its SEDAR Advisory Panel to participate in SEDAR workshop panels; these procedures need not be identical for each Council. The SEDAR program provides travel expenses for workshop panelists appointed by the Councils, Council members appointed to observe the workshops, and support staff. Invitations to Council appointed participants in SEDAR workshops are issued by the Council making the appointment.

All SEDAR workshops are open to the public, noticed through the Federal Register and the SEDAR website, and recorded. SEDAR staff is responsible for submitting Federal Register Notices for all workshops and Steering Committee Meetings. Each Council is responsible for any additional notices, such as press releases, newsletters, or website announcements.

2.3 Scheduling

SEDAR cycles require a minimum of six months, not counting the time that may be necessary for tasks such as research projects, data collection and entry, or age structure interpretation. Spreading the workshops over time allows participants to complete SEDAR tasks without excessive detriment to other responsibilities. An extended period also eases scheduling burdens and promotes separation of SEDAR workshops and meetings of the Councils and Commissions in the Region that are also competing for the time of agency technical staff and constituent representatives. Experience proves that SEDAR cycles should not overlap – one should be completed before another begins. This ensures that preparations for one cycle do not interfere with another cycle.

A general schedule can be developed based on the preparation time needed before and after each workshop. Dates for all three workshops should be approved, a preliminary count of expected participants should be provided to the SEDAR Coordinator, and key participants (Council Staff, Lead Analysts, Data Workgroup leaders) should be identified approximately 9 months prior to the Data Workshop. Analysts and data collectors should begin drafting issue papers and preparing data for submission approximately 6 months weeks prior to the data workshop. Data workshops require a weeklong meeting, and additional time over the following weeks to finalize the report. The Data workshop report should complete and the datasets are finalized within 2 months of the assessment workshop so that assessment analysts can begin preliminary model development and draft issue papers describing model options. Approximately three months are needed between the data and assessment workshops to complete these tasks. The assessment workshop requires another weeklong meeting, followed by approximately 4 weeks to finalize the report, complete any subsequent analyses, and produce the necessary figures and tables. The Assessment Report should be finalized for distribution to the review panelists at least 2 weeks before the review workshop. The review workshop requires a weeklong meeting, followed by 2-3 weeks to finalize the report.

SEDAR scheduling is based on 2 annual cycles spread over a calendar year, with a Spring cycle running from February – July and a Fall cycle running from August – January. Data workshops of one cycle will be scheduled approximately 4 weeks following the review workshop of the previous cycle. Actual dates will be determined by

the SEDAR coordinator with advice from the Steering Committee and with regard to Council meeting schedules and other critical SEFSC obligations.

2.4 Workload

SEDAR cycles will be limited to at most 3 complete benchmark assessments. This may involve a single species with multiple management units or stocks, as in the case of king or Spanish mackerel, or may include separate species if they are closely related based on life history or fisheries. SEDAR cycles will typically be devoted to species encompassing a single Council's jurisdiction. Exceptions may occur with those stocks or stock units managed by more than one Council, such as king and Spanish Mackerel where there is a joint Gulf-South Atlantic FMP and each Council has jurisdiction over a particular migratory unit, or in the event the Steering Committee believes efficiency will be gained by crossing jurisdictions. Additional related species may occasionally be added to data workshops to document their data quality or identify research and monitoring needs, and additional assessments completed by State agencies or the Interstate Commissions may be added to review workshops. A cycle may be devoted to a single assessment if the assessment is expected to be particularly complex or controversial.

3. SEDAR Workshops

SEDAR is structured around three separate workshops. At the Data workshop participants will review and compile data necessary for stock assessment. At the Assessment workshop participants will review and refine assessment models, select base and sensitivity configurations, recommend a preferred model for providing assessment advice, and provide estimates of stock status and management parameters. At the review workshop the entire process is reviewed by an independent panel of experts charged with ensuring that final assessment products are complete, accurately presented, and reliable.

The charge to each workshop is specified in terms of reference. General terms of reference are included for each workshop in the following section. Each Council shall approve final terms of reference for assessments of those stocks under its jurisdiction.

The success of SEDAR depends heavily on the involvement of the workshop panelists. All panel participants at each workshop are expected to actively contribute to the workshop process through participation in group discussions, preparation of supporting analyses and summaries, and preparation of workshop report text. Participants are expected to provide alternative solutions along with any criticisms. No personal attacks or aggressive behavior will be tolerated.

The basic workshop nature of the SEDAR process prevents development of and adherence to structured and timed workshop agendas. While starting and ending times of workshops are strictly followed due to the demands of planning travel, activities during workshops will be scheduled according to progress and workload. Participants should be prepared for possible workshop sessions outside the normal '9 to 5' of typical meetings.

SEDAR is a Council process and as such is an open and public process. Although participation on workshop panels is limited to official appointees, all workshops are open to the public. A policy of accepting public comment informally and as needed during

workshops has proven effective. All documents, including workshop reports and submitted and numbered working documents, are made available to the public and posted on the internet.

3.1 Data Workshop

Data workshop participants assemble and critique all available fishery data, monitoring programs, and life history information. Data workshop participants provide the consensus databases used to conduct stock assessments. Analytical techniques appropriate for the available datasets are recommended for the Assessment Workshop. Data workshop decisions and recommendations are documented in the SEDAR Assessment Report. Data formats and documentation guidelines are distributed in advance, and some preliminary analyses of the data are conducted prior to the workshop.

Data workshop participants include database managers; data specialists; data collectors; life history researchers; stock assessment scientists from States, NOAA Fisheries, Commission, universities, independent laboratories and institutions; and Council representatives (advisory panel leaders or chairs: commercial, recreational, NGO, staff and Council members). The SEDAR coordinator will typically serve as the data workshop Chair.

Data workshops are structured around working groups dedicated to particular data issues, such as commercial statistics, recreational statistics, life history, and abundance indices. Specific groups are determined based on the needs of the candidate species. Participants are assigned to workgroups in advance, based on their particular skills, experience, and expertise. Each group ideally includes someone experienced in assessment modeling. A leader appointed for each workgroup is responsible for recording panel discussions and decisions on their workgroups data charge and ensuring that relevant report sections are drafted.

Data workshop working groups review submitted data and working papers within their area of responsibility and develop initial recommendations and alternatives for consideration by the entire panel. Most of the data workshop meeting time is devoted to break-out sessions where the workgroups deliberate. Plenary sessions of the entire data workshop panel are convened as needed to review workgroup recommendations and develop consensus opinions on all issues. All decisions of the data workshop are made during the plenary sessions by consensus of the entire membership.

The charge to the data workshop is specified in Terms of Reference. Each workgroup is assigned one or more of the data workshop terms of reference. General Terms of Reference are provided below; however, this list does not prevent the cooperator requesting the assessment from modifying the list and specifying additional terms. The Terms of Reference for each data workshop shall be approved by the Council or Commission requesting the assessment within 2 months of the start of the workshop.

General Data Workshop Terms of Reference.

1. Characterize stock structure and develop a unit stock definition.
2. Tabulate available life history information (e.g., age, growth, natural mortality, reproductive characteristics); provide appropriate models to describe growth, maturation, and fecundity by age,

sex, or length as applicable. Evaluate the adequacy of life-history information for conducting stock assessments and recommend life history information for use in population modeling.

3. Provide measures of population abundance that are appropriate for stock assessment. Document all programs used to develop indices, addressing program objectives, methods, coverage, sampling intensity, and other relevant characteristics. Consider fishery dependent and independent data sources; develop values by appropriate strata (e.g., age, size, area, and fishery) and provide measures of precision. Evaluate the degree to which available indices adequately represent fishery and population conditions. Recommend which data sources should be considered in assessment modeling.
4. Characterize commercial and recreational catch, including both landings and discard removals, in weight and number. Evaluate the adequacy of available data for accurately characterizing harvest and discard by species and fishery sector. Provide length and age distributions if feasible.
5. Provide recommendations for future research in areas such as sampling, fishery monitoring, and stock assessment. Include specific guidance on sampling intensity and coverage where possible.
6. Prepare complete documentation of workshop actions and decisions (Section II. of the SEDAR assessment report).

Workgroup products include the complete time-series of data necessary to run stock assessment models (see the SEDAR outline for complete details), clearly stated recommendations indicating which available data sources are appropriate for use in assessment modeling, and complete documentation of datasets and workshop activities. Final datasets accepted by the group will be documented in the workshop report and available in electronic format at the conclusion of the workshop. Supporting documentation and preliminary or exploratory analyses are typically documented in the working papers. Results of the workshop are documented in the data workshop report, which is section II of the SEDAR Stock Assessment Report.

Data Workshop Responsibilities:

A number of specific jobs are required for to complete the terms of reference for data workshops. Each partner in the process is expected to appoint participants with the intent of ensuring each job is filled. The Steering Committee approved the following jobs and identified the SEDAR partner (noted in parentheses) that will typically provide the personnel to fill the job:

Chair: (SEDAR Coordinator) Runs the workshop, schedules work and plenary sessions, ensures Terms of Reference are addressed.

Workgroup Leaders: (SEFSC and Council appointees) Lead individual workgroups, coordinate initial data analyses and working papers, present group recommendations during plenary sessions, serve as lead author for group's report section.

Workgroup Rapporteur: (SEFSC and Council appointees) Take notes during group work sessions and plenary, help group leader draft report text and plenary reports.

Chief Editor: (SEDAR Staff): Responsible for compiling group document segments into the final workshop report, distributing document to the workshop panel for review, and submitting the final workshop report to the SEDAR coordinator.

Participant Information

Serving as a data workshop panelist is a considerable commitment that will require more time than simply the week of the workshop. Panelists will need to set aside time in the weeks prior to the workshop to review documents and for some, to prepare datasets. Workgroup meetings often extend beyond the normal ‘9 to 5’ of most meetings; evening sessions are the norm rather than the exception. Time is required following the workshop to review and finalize reports. In many instances further data analysis is required to address workshop recommendations and prepare datasets for the assessment.

Workshop participants should bring a laptop computer for data manipulation, analysis, and text drafting. Participants are encouraged to bring basic datasets and appropriate software so that additional analyses and corrections can be prepared during the workshop. Participants are encouraged to submit working papers documenting their data and analyses.

In general, the Data Workshop will occur about 12 weeks prior to the Stock Assessment Workshop to allow time for completion of the report and datasets and development of initial model runs.

3.2 Assessment Workshop

Participants at the assessment workshop conduct stock assessments, prepare stock rebuilding analyses, and estimate population benchmarks. Specific assessment methods vary and are based on the level of available data. Provisions of the NMFS Technical Guidance Document are considered when assessing the status of data poor stocks.

Assessment workshop participants include NOAA Fisheries stock assessment scientists, Commission/State/university/independent assessment scientists, biologists representing interest groups (commercial, recreational, NGO), Council advisory panels (commercial, recreational, and/or NGO) representatives, Scientific & Statistical Committees, Council staff and Council members. Stock assessment workshop participants are appointed from each Councils’ SEDAR Advisory Panel. Participants perform functions outlined in various Council FMP framework procedures, including producing an assessment report, evaluating stock status, recommending allowable harvest levels (ABCs), and providing values of SFA criteria such as B_{msy} , F_{msy} , MSST, MFMT, and T_{min} . Assessment workshop products are guided by Council requirements, the Sustainable Fisheries Act, and the National Standards.

The charge to the assessment workshop is specified in Terms of Reference. General Terms of Reference are provided below; however, this list does not prevent the cooperators requesting the assessment from modifying the list and specifying additional terms. The Terms of Reference for each assessment workshop shall be approved at least 2 months prior to the workshop by the Council or Commission requesting the assessment.

General Assessment Workshop Terms of Reference

1. Select several modeling approaches based on available data sources, parameters and values required to manage the stock, and recommendations of the data workshop.
2. Provide justification for the chosen data sources and for any deviations from data workshop recommendations.

3. Provide estimates of stock parameters (fishing mortality, abundance, biomass, selectivity, stock-recruitment relationship, etc); include appropriate and representative measures of precision for parameter estimates and measures of model 'goodness of fit'.
4. Characterize uncertainty in the assessment, considering components such as input data, modeling approach, and model configuration.
5. Provide yield-per-recruit, spawner-per-recruit, and stock-recruitment analyses.
6. Provide complete SFA criteria. This may include evaluating existing SFA benchmarks or estimating alternative SFA benchmarks (SFA benchmarks include MSY, Fmsy, Bmsy, MSST, and MFMT); recommend proxy values where necessary; provide stock control rules.
7. Provide declarations of stock status relative to SFA benchmarks: MSY, Fmsy, Bmsy, MSST, MFMT.
8. Recommend an Allowable Biological Catch (ABC) range.
9. Project future stock conditions (biomass, abundance, and exploitation) and develop rebuilding schedules if warranted; include estimated generation time. Stock projections shall be developed in accordance with the following:
 - A) If stock is overfished:
 $F=0$, $F=current$, $F=Fmsy$, $F=target$ (OY),
 $F=Frebuild$ (max that rebuild in allowed time)
 - B) If stock is overfishing
 $F=Fcurrent$, $F=Fmsy$, $F= Ftarget$ (OY)
 - C) If stock is neither overfished nor overfishing
 $F=Fcurrent$, $F=Fmsy$, $F=Ftarget$ (OY)
10. Evaluate the results of past management actions and probable impacts of current management actions with emphasis on determining progress toward stated management goals.
11. Provide recommendations for future research and data collection (field and assessment); be as specific as practicable in describing sampling design and sampling intensity.
12. Provide the Assessment Workshop Report (Section III of the SEDAR Stock Assessment Report); and a draft Advisory Report for each stock.

Reports are to be finalized within 4 weeks of the conclusion of the Assessment Workshop.

If final assessment results are not available for review by workshop panelists during the workshop, the panel shall determine deadlines and methods for distribution and review of the final results and completion of the workshop report.

Workshop Responsibilities

A number of specific jobs are required to complete the terms of reference for assessment workshops. Each partner in the process is expected to appoint participants with the intent of ensuring each job is filled. The Steering Committee approved the following jobs and identified the SEDAR partner (noted in parentheses) that will typically provide the personnel to fill the job:

Workshop Chair: (SEDAR Coordinator) Responsible for conducting the workshop, scheduling workshop sessions, and ensuring the Terms of Reference are addressed.

Workshop Rapporteur: (Council Appointee) Responsible for taking notes during plenary sessions to ensure that discussion items are reflected in the workshop report, assists chair in ensuring Terms of Reference and Council requirements are addressed. Also serves as editor for the proceedings section of the assessment workshop report.

Lead Analyst: (SEFSC/Assessment Agency) Leader of the assessment team, responsible for preparing population models and making presentations to the

assessment panel. Also responsible for presenting the assessment to the Review Panel and possibly the SSC and Council.

Analytical Team: Core group of assessment analysts responsible for conducting model runs, presenting results, and conducting further analyses during the Review Workshop.

A written draft report, providing an overview of the analyses, general findings, and recommendations of the workshop, shall be completed during the workshop. All workshop panelists are expected to contribute to the report effort. This report may be expanded and modified following the workshop. The assessment workshop report consists of two primary sections: 1) workshop proceedings, documenting panel discussion and recommendations, and 2) assessment methods and results, documenting the specifics of each assessment model.

Participant Information

Serving as an assessment workshop panelists is a considerable commitment requiring more time than the typical meeting. Panelists will need to set aside time in the weeks prior to the workshop to review documents and prepare analyses. Workshops often extend beyond the normal ‘9 to 5’ of most meetings and evening working sessions are often required for conducting analyses and drafting the report. Time is needed following the workshop to review and finalize the assessment report.

If final assessment results cannot be provided during the scheduled assessment workshop, the workshop panel shall agree to a process and timeline for reviewing the final products and finalizing the workshop report. In the event issues arise that cannot be addressed during the time scheduled for the assessment workshop, the workshop panel should develop a recommended course of action for consideration by the SEDAR steering committee. Alternatives include reconvening the panel at a later date, conference calls, written reviews, or electronic ‘email’ discussion threads.

Participants should bring a laptop computer for word processing, data manipulation, and modeling.

3.3 Review Workshop

SEDAR Review Workshops provide independent peer reviews of stock assessments prepared through SEDAR data and assessment workshops. The term ‘review’ is applied broadly, as the goal is not a simple pass-fail evaluation of the assessment. The intent is to ensure that the assessment and results presented are scientifically sound and that decision makers are provided adequate advice. The Review Panel may request additional analyses, corrections of existing analyses and sensitivity runs from the assessment model provided by the Assessment Workshop. An Analytical Team, composed of a subset of the Assessment Workshop panel and representing the primary analysts for each assessment, will be present at the workshop to present assessment findings, provide additional results or model information, and prepare any additional analyses requested by the Review Panel. Although many individuals contribute to a SEDAR assessment, the Review Panel is ultimately responsible for ensuring that the best possible assessment is provided through the SEDAR process.

The review panel shall 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.

SEDAR review workshop panels are typically composed of a Chair and 3 reviewers appointed by the CIE (Center for Independent Experts). Each Council may appoint several observers, typically including representative of the Council, its SSC, and appropriate Advisory Panels.

All SEDAR workshops, including the Review Workshop, are open, transparent, public processes administered according to the rules and regulations governing Federal Fishery Management Council operations. The names and affiliations of reviewers will be disclosed in the review workshop documents. The Review Workshop Consensus Summary and Advisory Reports will be publicly distributed along with the other SEDAR Workshop working papers and reports. The public will be given an opportunity to comment during the Review Workshop and may submit written comments in accordance with Council guidelines.

Review workshop panelists receive the Assessment Report including sections prepared by the data and assessment workshops, supplemental analytical materials including all working papers and reference documents from prior workshops, and consensus data sets at least two weeks prior to the review workshop.

The charge to each SEDAR Review Workshop is specified in Terms of Reference that are approved by the Councils having jurisdiction over the stocks assessed. During the review the Review Workshop panel will prepare a Consensus Summary addressing each of the Terms of Reference. The consensus summary should represent the views of the group as a whole, and may include any dissenting views of individual panelists. The panel will also finalize an Advisory Report for each assessment which summarizes the primary assessment findings. Outlines and example documents will be provided by SEDAR staff.

General 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 stocks.
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*, *F_{msy}*, *B_{msy}*, *MSST*, *MFMT*, or *their proxies*); provide recommended values for management benchmarks, a range of 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* (*e.g.*, exploitation, abundance, biomass).
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.
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. (In the event corrections are made in the assessment, alternative model configurations are recommended, or

additional analyses are prepared as a result of review panel findings regarding the TORs above, ensure that corrected estimates are provided by addenda to the assessment report)

8. Evaluate the 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.
9. Review 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.
10. Prepare a Peer Review Consensus Summary summarizing the Panel's evaluation of each stock assessment and addressing each Term of Reference. Finalize the Advisory Report summarizing key assessment results for each stock. (Reports to be drafted by the Panel during the review workshop with a final report due two weeks after the workshop ends.)

* The review panel may request additional sensitivity analyses, evaluation of alternative assumptions, and correction of errors identified in the assessments provided by the assessment workshop panel; the review panel may not request a new assessment. Additional details regarding the latitude given the review panel to deviate from assessments provided by the assessment workshop panel are provided in the *SEDAR Guidelines* and the *SEDAR Review Panel Overview and Instructions*.

Review Workshop Panel Instructions

The Review Panel Chair is responsible for compiling and editing the Review Panel Consensus Summary and Advisory Reports and submitting the reports to the SEDAR Coordinator by a deadline specified by the SEDAR Steering Committee. At the start of the workshop the Chair will assign each panelist specific duties, such as drafting specific consensus and advisory report sections. The Chair will select one panelist to serve as assessment leader for each stock assessment under review. The assessment leader is responsible for preparing initial drafts of the consensus report and advisory report for the assigned assessment. Such duties may be further subdivided if workshop manpower allows. The SEFSC will provide a rapporteur to take notes on the discussions so that panelists can more fully participate in discussions and assist the analytical team in documenting panel recommendations.

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 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. Any additional or supplemental analyses requested by the Review Panel and completed by the

Analytical team shall, at the discretion of the chair and panel, be either documented through a supplemental report or included in the Review Panel Consensus Summary.

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 an alternative assessment, then the Review Panel shall provide in writing the required remedial measures suggest an appropriate approach for correcting the assessment and subsequently reviewing the corrected assessment.

Review Workshop Responsibilities

Chair (SEFSC appointee): Responsible for conducting the panel during the workshop; ensuring recommendations and comments are reflected in panel reports; submitting panel documents by stated deadlines

Analytical Team (Assessment Agency): Responsible for presenting assessment results, fulfilling panel requests for additional analyses or model corrections in accordance with SEDAR guidelines.

Assessment Leader (Chosen Panelist; 1 per assessment): Responsible for initial consensus and advisory drafts for assigned assessment

Rapporteur (SEFSC; 1 per assessment): Responsible for keeping notes on panel discussion of assigned species and assisting Assessment Leader as requested in drafting initial consensus and advisory report statements.

Participant Information

Serving as a review workshop panelists is a considerable time commitment that requires more than simply the daily sessions of the review workshop. Panelists will need to set aside time in the weeks prior to the workshop to review data and assessment documents. During the workshop, time beyond that of the scheduled daily sessions may be required to complete workshop tasks and reports. Time is required following the workshop to review and finalize panel reports.

Review panelists are expected to prepare workshop reports and should come prepared with a laptop computer for drafting text and possibly conducting additional analyses and data summarizations.

The SEDAR Steering Committee and SEDAR Coordinator establish deadlines for document submission. SEDAR staff distributes working documents and support materials (agenda, participant instructions) to workshop participants, typically two weeks prior to the workshop.

3.4 Summarized SEDAR Workshop Responsibilities

SEDAR staff works with Council administrative staff to secure meeting and lodging space and provide staff support for the workshops.

Councils appoint participants from their SEDAR Advisory Pool, issue invitations to those whom they appoint, and provide the SEDAR coordinator with a list of appointments and current contact information.

The SEFSC Director and SE Regional Administrator designate members of their staff to participate in Data and Assessment Workshop Panels and provide the SEDAR Coordinator with a list of designated participants.

The SEFSC Director may appoint additional experts (such as university researchers, international experts, and NOAA Fisheries employees from outside the SE Region) for Data and Assessment Workshop panels as necessary to complete assigned Terms of Reference and ensure adequate expertise is available at each workshop.

SEDAR and Council staff provide administrative support for workshops, including recording proceedings.

SEFSC provides rapporteurs for Review Workshop - 1 for each assessment

SEDAR staff distributes meeting materials. Authors are responsible for distribution of any meeting materials that are not provided by stated deadlines.

SEDAR staff submits Federal Register Notices. Council staff may review the FRN before submission.

The SAFMC provides travel orders for all eligible Council-appointed participants.

The lead Council for each SEDAR cycle is responsible for reviewing and approving the specific Terms of Reference for each workshop in the cycle. The SEDAR coordinator will provide draft Terms of Reference based on these guidelines.

4. General Policies

4.1 Management Advice

SEDAR is intended to improve the quality of scientific advice provided to management entities in the Southeast Region. An important component is maintaining separation of management and science. SEDAR workshop panels are charged with considering biological and technical aspects of stock assessments and basing their decisions upon the scientific merit of the alternatives proposed.

SEDAR Workshop Panels are not approved to provide specific management advice. “Specific advice” includes any recommendations to take particular actions such as seasonal closures, bag limits, or size limits; any recommendations of specific values for exploitation or harvest limit changes, or recommendations regarding specific catch limits other than an Acceptable Biological Catch (ABC).

At no point during the deliberations of any workshop panel should the panel consider the implications that the assessment may have upon management decisions or resource users. Any participants who embark upon such discussions will be reminded by the workshop chair that such deliberations are beyond the scope of SEDAR workshops. If such issues continue to be raised, Council staff and Council members present may ask the offending individual to leave the workshop.

These policies are not intended to imply in any way that management advice is not necessary or that social and economic considerations are not important. Rather, the intent is to acknowledge several important facts of the Council SEDAR process: (1) consideration of management impacts is beyond the scope of the charge to the SEDAR

panels, (2) SEDAR specifically strives to separate management considerations from scientific decisions, (3) SEDAR Panel participants are selected based on technical, biological, and assessment knowledge, (4) consideration of social and economic consequences is specifically mandated to the Councils and various Council Committees composed of experts qualified to evaluate the social and economic consequences of management actions.

4.2 SEDAR Documents

The SEDAR process generates many documents, ranging from simple descriptions of sampling projects to complete stock assessments. The SEDAR document numbering system provides a tool for organizing and tracking submitted documents. The SEDAR Document Series includes three types of documents: Working Papers, Research Documents, and Assessment Reports. Working papers are original works prepared for a SEDAR workshop. Research Documents are peer reviewed publications provided or reviewed during SEDAR workshops. Assessment Reports are the combined data, assessment, and review workshop reports.

Starting with the fourth SEDAR, Atlantic and Caribbean Deepwater snapper grouper, documents prepared for SEDAR workshops follow the SEDAR document series numbering convention. Documents are numbered separately for each workshop in a SEDAR cycle. The SEDAR coordinator will maintain the master document list and issue document numbers to authors. Each SEDAR working paper should list an associated author and date. Working papers may be revised or updated after initial submission. The date of each revision should be indicated on the cover page of each revised document. Additional specifications for the SEDAR document series are provided in Appendix C.

SEDAR is a public process and therefore all documents will be made available to any member of the public upon request. Working papers, Research Documents, and Assessment Reports will be distributed to all workshop participants, those Councils involved in the particular assessment, the SERO and the SEFSC. All documents will be posted to the SEDAR website as Adobe .PDF files. The only exception to this is for any research documents protected by copyright regulations that prohibit website posting and distribution.

4.3 Treatment of Confidential Data

SEDAR is considered a public process and every effort is made to ensure that all participants have equal access to data and reports and that the overall process is open and transparent. However, in the course of stock assessment and fisheries data analysis, it is at times necessary to conduct analyses on data that are considered confidential and which therefore may not be distributed to the general public. Such data should be aggregated in a manner consistent with confidentiality requirements before being included in any SEDAR working documents or assessment reports as such reports will be publicly available and posted on the internet. Those researchers working with confidential datasets are responsible for ensuring that only information that can be publicly disseminated is included in SEDAR reports and any documents submitted for consideration by a workshop panel during a SEDAR workshop. Datasets containing confidential data shall not be loaded onto publicly accessible locations on the SEDAR LAN's that are available at SEDAR workshops or onto any SEDAR website locations. Any SEDAR workshop

panelist that lacking clearance to access confidential datasets and who desire such access must follow the standard protocols of the agency managing the data to request access. Appointment to a SEDAR panel is not intended in any way to circumvent any agency confidentiality requirements and does not in any way provide default clearance to access confidential data.

4.4 Dissemination of SEDAR reports

SEDAR staff will provide the final assessment reports and all working papers prepared during the cycle to each Council involved in a given SEDAR cycle to the Councils involved in the assessment, the SEFSC Director, and the SE Regional Administrator. A cd containing all documents, submitted datasets, and working analyses provided to each workshop in a cycle will be provided to the Council, SEFSC Director, and SE Regional Administrator. Each Council is responsible for any further distribution of the reports and working papers to their SSC, Council, Advisory Panels, and other committees as necessary. Final reports and working papers will be posted on the SEDAR website.

4.5 Model Acceptance Criteria

To prevent errors in model code and discourage computer programming mistakes, the SEDAR Steering Committee requires that analysts use NMFS Toolbox assessment models whenever possible. Other accepted, proven, and validated fisheries assessment models may also be considered, such as those used by various international scientific bodies such as ICES or ICCAT.

The Steering Committee further acknowledges that many Southeast species lack sufficient data for assessment through standard models and therefore will allow custom-programmed models for SEDAR assessments under the following conditions:

- 1) complete documentation and code must be provided;
- 2) an executable version of the program and all necessary input and control files must be provided to workshop participants;
- 3) the custom code/application used must be validated through application of known outcome datasets and such results must be provided as part of the assessment documentation; (*may be met through reference documents*)
- 4) justification for use of custom programming in lieu of readily available models must be provided in the assessment documentation.

Analysts who develop a particular model that proves useful for multiple SEDAR assessments are encouraged to submit the model for inclusion in the NMFS toolbox.

4.6 Continuity Models

The SEDAR process requires evaluation and explicit approval of all stock assessment components and decisions. SEDAR benchmarks are intended to be completely new assessments during which all past decisions and recommendations are reconsidered. However, it is critical to maintain a linkage between previous and current assessment efforts and, in the event assessment results change, to provide some insight as to whether such changes are largely due to changes in basic datasets or changes in assessment methodology. Therefore, each benchmark SEDAR assessment shall include a

‘continuity model’ that to the extent possible is an identical replication of the previous assessment updated to include the most recent available data.

4.7 SEDAR Administrative Record

The SEDAR Administrative Record, including the official records of SEDAR workshop and Steering Committee meetings, will be housed at the SEDAR office at the SAFMC and managed by the SEDAR coordinator and Administrative Assistant. The Administrative Record from each SEDAR cycle will include the following:

- all documents distributed at SEDAR workshops;
- electronic copies of any datasets, programs, and code provided to participants;
- administrative correspondence including travel notices, Federal Register Notices, document distribution memos, workshop agendas, and participant sign-in sheets;
- media containing recorded workshop proceedings.

The Administrative Record of the Steering Committee will include administrative correspondence such as Federal Register Notices, document distribution memos, and meeting notices; all briefing documents; summary motions and consensus statements; and media containing recorded meeting proceedings.

Written transcripts of workshop proceedings and steering committee meetings will be prepared upon request by any Steering Committee member.

4.8 Paperless Policy

SEDAR workshops rely on electronic distribution of materials to save paper and postage costs and reduce administrative workloads. A wireless LAN is set-up at each workshop to facilitate document and dataset exchange and distribution. Final reports and working papers are posted on the SEDAR website. Final workshop documentation is provided to the Councils, SEFSC, and SERO on cd.

Hard copies or cd’s of workshop materials will be provided to any workshop panelist upon request.

4.9 SEDAR Website

General process information and final assessment documentation is distributed via a SEDAR website (<http://www.sefsc.noaa.gov/sedar/>) which is hosted by SEFSC and administered by the SEDAR Coordinator. Content is largely technical in nature, consisting of assessment reports, working papers, workshop presentations, and reference documents. Other postings include the SEDAR schedule of events, these guidelines, compiled research recommendations, and links to the Councils and state agencies in the Southeast Region.

5. SEDAR Assessment Classifications

5.1 Benchmark Assessments

Standard SEDAR assessments are considered benchmarks that are solicited for the most pressing management issues and first time assessments. Stocks assessed prior to SEDAR should be assessed through SEDAR before any updates in the previous assessments are considered. When a stock is assessed through a SEDAR benchmark assessment, all previous decisions, methods, and datasets shall be reconsidered.

5.2 Assessment Updates

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 Council's SSC. Council SSC's 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.

6. Relationship of SEDAR to the Councils and Council Committees.

SEDAR attempts to co-exist within the existing framework of Council and Commission Committees and advisory bodies. Nothing in these guidelines is intended to prohibit any Council or Commission from pursuing its own chosen process of technical review and advice.

Each Council may review the products of SEDAR stock assessments in accordance with its rules and procedures. Each Council is allowed latitude in determining how SEDAR assessment products are presented to the Council and its technical and advisory bodies.

For the Interstate Commissions, SEDAR provides a source of independent peer review of stock assessment products.

6.1 Council & Committees

Council technical advisory body members (including Science & Statistical Committees as well as various additional committees devoted to particular areas such as stock assessment or social and economic issues) are included in Council SEDAR Advisory Pools and appointed to workshops and therefore perform the functions currently outlined in a number of the Council FMP frameworks. This includes producing an assessment report and recommending management and SFA parameters such as ABC, Bmsy, Fmsy, MFMT, and MSST as necessary to meet SFA requirements. SEDAR reports may serve as the assessment reports, avoiding the need for Council Committees to draft additional separate reports. NOAA General Counsel recommended that FMP's and Amendments incorporate the SEDAR process as outlined in these Guidelines as the source of assessment information and SFA criteria. Each Council is given latitude in deciding how SEDAR reports will be reviewed once the SEDAR cycle is completed and the stock assessment report finalized.

Separation of responsibility for specific management recommendations between SEDAR panels and Council SSC and other standing committees is intentional. It is the expressed intent of the SEDAR Steering Committee and the cooperating Councils that no specific management recommendations be included in SEDAR reports.

Advisory Panels (AP) consist of commercial and recreational fishermen and NGO representatives. Under SEDAR's principle of enhanced participation, increased NGO representation is desired; Councils are encouraged to accomplish this through appointments to each their SEDAR AP. Advisory Panels review the Assessment Report, socioeconomic reports, and the Review Panel Consensus Summary and Advisory Report and make management recommendations in accordance with each Council's rules and procedures.

Role of the SSC

Council standing Scientific and Statistical Committees, in accordance with Section 302 of the Magnuson-Stevens Act, "assist in the development, collection, and evaluation of such statistical, biological, economic, social, and other scientific information as is relevant to such Council's development and amendment of any fishery management plan". SEDAR Assessment Reports, Review Panel Reports, and supporting documents submitted and prepared during the Workshops are provided to the appropriate

Council for SSC review. Specific guidance for SSC review is provided by each Council. Individual Councils may also adapt this requirement to include review and action by their various other technical committees.

In general, the SSC reviews the Assessment Report, any socioeconomic reports, and the Review Panel reports. The SSC makes a recommendation to the Council as to whether the reports represent the best available scientific information and are adequate for management. The SSC comments on the scientific adequacy of the SEDAR assessment, recommends TAC and management measures that consider both biological and socioeconomic analyses, and recommends future scientific research and data needs.

SSC's are responsible for presenting to their council their evaluation of the adequacy of the assessment, their interpretation and summary of the assessment methods and findings, and their recommendations regarding appropriate actions. A representative appointed by the SSC should take the primary lead in presenting SEDAR assessments to the Council. Councils should consider this responsibility when making appointments to SEDAR workshops, especially the review workshop.

Councils should make every effort to schedule their meetings such that the number of assessment presentations required of the analytical team is minimized. Councils should schedule meetings to accommodate a technical presentation to all of their various technical bodies at once, rather than individual presentations across several meetings of the various bodies. Analytical representatives can be on hand to answer questions when the assessment is presented to the Council, but are not obligated to lead the presentation.

6.2 Interstate Commissions

The Atlantic States Marine Fisheries Commission's Stock Assessment Committee reviewed the Commission's internal process for conducting stock assessments in relation to SEDAR, and recommended that data workshop and stock assessment workshops become a standard part of the Commission stock assessment process. The additional input that SEDAR provides from both data holders and stakeholders will improve buy-in and transparency from the earliest part of the assessment process. ASMFC technical committees or stock assessment subcommittees conduct assessment workshops with an expanded number of participants. Federal, state, university, industry, and other outside experts are invited to participate in evaluating the data inputs to the model, as well as conducting the assessment model. Assessments prepared through ASMFC may be reviewed by SEDAR Review Workshop Panels.

7. Public Participation

SEDAR is a Council process, and as such, public participation is encouraged. SEDAR meetings are open to the public and advertised by the Councils and through the Federal Register. To clarify the role and nature of public participation, the following is noted on SEDAR workshop agendas: "Public participation during SEDAR workshops is handled similar to current Council technical and committee meetings, in that no formal period of public testimony is scheduled. Instead, the Chair is free to call on the public for comment as necessary and appropriate during workshop deliberations. Written public comment should be submitted in accordance with the guidelines of the host Council". During all workshops, interested parties are permitted to comment on discussion items as

the meeting proceeds. Written comments are handled in accordance with guidelines established by each Council.

8. Appendices

8.1 Appendix A. SEDAR Assessment Report Outline

The following outlines the contents and organization of the SEDAR Assessment Report. Each SEDAR workshop prepares a complete report that ultimately becomes one section of the SEDAR Assessment Report. The SEDAR Assessment Report is separated into four sections: Section I summarizes the SEDAR process, management history, and assessment background; Section II documents input data and is drafted by the Data Workshop Panel; Section III documents the assessment methods and results and is drafted by the Assessment Workshop Panel; and Section IV documents the Review Workshop actions. Species that undergo data review but not assessment are documented in individual species reports following the format of Section I. An Assessment Report will be prepared for each stock assessed during a cycle.

SEDAR Stock Assessment Report Outline

I. Introduction

Cover Page

Table of Contents

1. SEDAR Process Description	SEDAR STAFF
2. Management Overview	COUNCIL/SERO STAFF
2.1 Management Unit Definition	
2.2 Regulatory History	
2.3 Current Management Criteria and Stock Benchmarks	
3. Assessment History	LEAD ASSESSMENT AGENCY
4. Advisory Report	ASSESSMENT & REVIEW WORKSHOP
Stock Distribution and Identification	
<i>Summary of the unit stock and its geographic distribution.</i>	
Assessment Methods	
<i>Summary of the assessment method.</i>	
Assessment Data	
<i>Summary of input data sources.</i>	
Catch Trends	
<i>Summary of catches by fishery</i>	
Fishing Mortality Trends	
<i>Summary of fishing mortality estimates</i>	
Stock Abundance and Biomass Trends	
<i>Summary of abundance, biomass, and recruitment</i>	
Status Determination Criteria	
<i>Summary of SFA and management criteria recommendations and values.</i>	
Stock Status	
<i>Declaration of stock status.</i>	
Projections	
<i>Summary of stock projections.</i>	
ABC	
<i>Allowable Biological Catch (ABC) Range</i>	
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

Summarize recent stock and fishery conditions: catch and discards by fishery sector, fishing mortality estimates, stock abundance and biomass, spawning stock biomass, recruitment, and stock status (e.g., F/F_{msy}, B/B_{msy}). Values will be provided by the analytical team.

Stock Status Criteria

Summarize recommended or mandated benchmarks & values

FIGURES:

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

II. Data Workshop Report

(Developed by Data Workshop Panel)

Cover Page

Table of Contents

List of Tables

List of Figures

1. Introduction
 - 1.1. Workshop Time and Place
 - 1.2. Terms of Reference
 - 1.3. List of Participants
 - 1.4. List of Data Workshop Working Papers
2. Life History
 - 2.1. Natural Mortality
 - 2.2. Age
 - 2.3. Growth
 - 2.4. Reproduction
 - 2.5. Movements & Migrations
 - 2.6. Stock Definition and Description
 - 2.7. Research Recommendations
 - 2.8. Literature Cited
 - 2.9. Tables
 - 2.10. Figures
3. Commercial Fishery (may be subdivided by gears/fleets)
 - 3.1. Overview
 - 3.2. Commercial Landings
 - 3.3. Commercial Discards
 - 3.4. Biological Sampling
 - 3.4.1. Sampling Intensity Length/Age/Weight
 - 3.4.2. Length/Age distributions

- 3.4.3. Adequacy for characterizing catch
- 3.5. Commercial Catch-at-Age/Length
- 3.6. Research Recommendations
- 3.7. Literature Cited
- 3.8. Tables
- 3.9. Figures
- 4. Recreational Fishery (May be further divided by Sectors, e.g., headboat, private, charter)
 - 4.1. Overview
 - 4.2. Recreational Landings
 - 4.3. Recreational Discards
 - 4.4. Biological Sampling
 - 4.4.1. Sampling Intensity Length/Age/Weight
 - 4.4.2. Length – Age distributions
 - 4.4.3. Adequacy for characterizing catch
 - 4.5. Recreational Catch-at-Age/Length
 - 4.6. Research Recommendations
 - 4.7. Literature Cited
 - 4.8. Tables
 - 4.9. Figures
- 5. Measures of Abundance

(Typically Independent Survey Information, though fishery-dependent CPUE may be included as well)

 - 5.1. Description of Survey (to 4.x where x= # of Surveys)
 - 5.1.1. Methods, Gears, and Coverage
 - 5.1.2. Sampling Intensity – Time Series
 - 5.1.3. Size/Age data
 - 5.1.4. Catch Rates – Number and Biomass
 - 5.1.5. Uncertainty and Measures of Precision
 - 5.2. Evaluation and Consensus recommendations

(Which of the available surveys are recommend for use in assessment modeling)
 - 5.3. Research Recommendations
 - 5.4. Literature Cited
 - 5.5. Tables
 - 5.6. Figures
- 6. Assessment Recommendations
 - 6.1. Data
 - 6.2. Methods

III. Stock Assessment Workshop Report

(Developed by Assessment Workshop Panel)

i. Cover Page

ii. Table of Contents

1. Workshop Proceedings

1.1. Introduction

1.1.1. Workshop Time and Place

1.1.2. Terms of Reference

(Provided by SEDAR Staff)

- 1.1.3. List of Participants
- 1.1.4. List of Assessment Workshop Working Papers

- 1.2. Panel Recommendations and Consensus *(Developed by AW Panel)*
*Consensus comments & recommendations, very similar to assessment panel reports prepared prior to SEDAR. **Each Term of Reference should be addressed.***
 - 1.2.1. Discussion and Recommendations Regarding Data Modifications
 - 1.2.2. Critique and Review of Each Model Considered
 - 1.2.2.1. Overview and Configuration
 - 1.2.2.2. Evaluations of Uncertainty
 - 1.2.2.3. Parameter Estimates
 - 1.2.3. Preferred Model and Configuration Recommendations;
 - 1.2.4. Recommended SFA parameters and Management Criteria (Provide Table)
 - 1.2.5. Status of Stock Declarations
 - 1.2.6. Discussion of Stock Projections
 - 1.2.7. Management Evaluation
 - 1.2.7.1. Effectiveness/impacts of past management actions
 - *Have size, bag, harvest limits etc. affected the stock? achieved objectives?*
 - *evaluation of rebuilding strategy (if implemented)*
 - 1.2.7.2. Possible impacts of proposed management actions
 - *Optional. Special Comments, Advice if particular regulations are pending*
 - 1.2.8. Other TORs not addressed above
 - 1.2.9. Research Recommendations

- 2. Data Review and Update *(Lead analyst or data compiler)*
Input data as used in assessment modeling should be tabulated here. Also address deviations from DW; Resolution of issues raised by DW; Additional data analyses

- 3. Stock Assessment Models and Results *(Prepared by Analyst for each model; likely finalized after AW)*
 - 3.1. Model 1 (Repeat to 3.X; X = # models considered. Model 1 is typically the ‘continuity case’)
 - 3.1.1. Model 1 Methods
 - 3.1.1.1. Overview
 - 3.1.1.2. Data Sources *(State sources and tabulate all data as used in the model - even if replication of some information in the data workshop report section)*
 - 3.1.1.3. Model Configuration and Equations *(Describe the configuration, explicitly state assumptions, explicitly list equations. If a standard accepted model (e.g. NFT, ICCAT, ICES, FAO, equations requirement may be accommodated by citation of program documentation.)*
 - 3.1.1.4. Parameters Estimated *(Provide listing of all model parameters. Tabulate)*
 - 3.1.1.5. Uncertainty and Measures of Precision *(Describe the methods used to evaluate sources of error- process, observation, etc)*
 - 3.1.1.6. Benchmark / Reference points methods
 - 3.1.1.7. Projection methods *(Describe methods, including assumptions)*
 - 3.1.2. Model 1 Results
 - 3.1.2.1. Measures of Overall Model Fit
 - 3.1.2.2. Parameter estimates & associated measures of uncertainty *(Provide table of all model parameters and their values. Include SE, CV, or other appropriate measures of variation)*
 - 3.1.2.3. Stock Abundance and Recruitment
 - 3.1.2.4. Stock Biomass (total and spawning stock)
 - 3.1.2.5. Fishery Selectivity
 - 3.1.2.6. Fishing Mortality

- 3.1.2.7. Stock-Recruitment Parameters
- 3.1.2.8. Evaluation of Uncertainty (*Broader than 3.1.2.2; evaluation of assumptions, model configurations etc. May include retrospective analyses, sensitivities*)
- 3.1.2.9. Benchmarks / Reference Points / ABC values (*Provide the management parameters*)
- 3.1.2.10. Projections
- 3.1.3. Discussion
- 3.1.4. Tables
- 3.1.5. Figures
- 3.1.6. References

IV. Review Workshop Report

(Developed by Review Workshop Panel)

- i. Cover Page
- ii. Table of Contents
- 1. Introduction
 - 1.1. Workshop Time and Place
 - 1.2. Terms of Reference
 - 1.3. List of Participants
 - 1.4. List of Review Workshop Working Papers & Documents
- 2. Consensus Report
 - 2.1. Consensus Statements addressing each TOR
 - 2.2. Additional Comments or Recommendations
 - 2.3. Comments & Recommendations regarding the SEDAR Process
- 3. CIE Reports

SEDAR ASSESSMENT REPORT: RECOMMENDED TABLES

All input data and model configuration information should be included in the assessment report in tabular form. Tables that are included in a workshop working paper need not necessarily be replicated in the report. Figures should be used to support the assessment and describe the input data, but no input data shall be presented solely in figure format. Large datasets such as length distributions or age-length keys may be included as appendices or provided in well organized spreadsheets that are submitted along with other workshop materials. Preliminary work and accessory tables in working papers may also be cited. However, all information required as input data for the chosen assessment models shall be listed in the report tables in the level of detail required for the assessment. The basic rule of thumb to follow is that the assessment report should contain all data necessary for one to duplicate the stock assessment.

The following list indicates the general information to be included in the tables of the assessment report. In some instances the list may include information (such as fecundity) or suggest a level of detail (such as ‘by age’) that is not feasible given the available data. Several listed items may be included in a single table. It is recognized that the specifics of each table can and will vary by assessment. The required reporting detail will be dictated by both data availability and modeling approach. For example, if the assessment model is based on annual landings at length by gear, then the report must include a table of landings by gear, year, and length class. Further, a model based on length may require that life history characteristics such as mean weight be reported by length class as well as age. Fisheries that have ‘fishing years’ that do not correspond to calendar years will require reporting of some data in both calendar and fishing year.

INPUT DATA TABLES (Data report section)

Life History

Mean weight & length
Maturation & sex ratio schedules
Fecundity
Age-Length keys
Growth models
Conversion factors

Catch

Total annual landings
Landings by sector (i.e., comm and rec)
Landings by gear/sector
Landings by state/jurisdiction/sector
Discards, discard losses, release mortality, by sector/gear
Catch mean weights, by sector/gear
Length distributions, by sector/gear/year, season
Total catch time series as input to model

Sampling

Length, age, weight sampling intensity
Number of samples taken
Number of trips sampled

Dependent Surveys and Effort

Total effort
Effort by gear/sector
Effort by state/jurisdiction
Survey CPUE time series as input to

model

Independent Surveys

Survey Effort
Survey Coverage
Survey length/age distribution
Survey CPUE, Catch
Survey CPUE time series as input to model

ASSESSMENT RESULTS TABLES (Assessment Report)Model specifications

- Complete list of input specifications and parameters required for the model
 - e.g., fitting methods, min/max limits, ages for averaging, assumptions
- List of all parameters estimated
- List of model equations if a 'custom' model; reference otherwise

Measures of precision and fit

- Error components, contribution to total error
- Sums of squares, variances, CV's, and other statistical measures for est. values
- Error weighting values
- Residuals (plotted)
- Time series of observed and predicted values for fitting/tuning criteria (plotted)

Population Estimates

- Total annual abundance
- Abundance at age
- Recruitment
- Biomass, annual and by age
- Spawner abundance and biomass, annual and by age
- Fecundity, total annual and by age

Exploitation

- Fishing mortality, instantaneous and annual, "Fully recruited" and by age
- Selectivity or partial recruitment

PROJECTIONS AND BENCHMARKS TABLESInputs

- Catch or exploitation assumptions
- Starting population values
- Fishery characteristics – selectivity, limits, weights
- Stock-recruit model or assumption

Projection Results

- Population abundance
- Recruitment
- Biomass
- Catch
- Exploitation

Benchmark Results

- SFA criteria values, confidence intervals
 - F_{msy}, MSST, MFMT, B_{msy}, Generation time estimate*
 - ABC Range

8.2 Appendix B. Review Panel Reports

The Review Panel is charged with producing a Consensus Summary and Advisory Report. In the Consensus Summary the review panel shall document their comments, criticisms, and suggestions and address the Terms of Reference. In the Advisory Report the panel shall summarize the stock assessment and the approved results.

8.2.1 Consensus Summary Contents

- Section 1. Workshop Information (SEDAR Coordinator)
 Note the dates and location of the Workshop
 List of Panel members
 List of Review Workshop working papers
- Section 2. Terms of Reference (Panel Leader)
 Address each item individually
- Section 3. General Comments
 Summarize additional comments or concerns, with a dedicated section for each constituent group on the review panel. These sections are encouraged but not mandatory. It is the responsibility of each group to draft comments and submit them to the Chair for inclusion in the final report. It is not necessary for the panel as a whole to review or necessarily agree with these comments.
 A. Scientists
 B. Constituents or fishers
 C. Environmentalists
- Section 4. SEDAR Review
 Provide any desired comments on the overall process

8.2.2 Advisory Report Contents

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*

8.3 Appendix C. SEDAR Document Series

The SEDAR process generates many documents, from simple descriptions of sampling projects to complete stock assessments. Organizing and keeping an administrative record of SEDAR documents requires a tracking system that can accommodate these many different document types. Starting with the fourth SEDAR, Atlantic and Caribbean Deepwater snapper grouper, documents prepared for SEDAR workshops follow the SEDAR document series numbering convention.

8.3.1 Document Types

Working Papers

Working Papers are the backbone documents of the Data and Assessment workshops. Through these informal papers authors describe data collection programs; present preliminary analyses of assessment components such as surveys, CPUE indices, and age composition; summarize life history information, and develop general descriptions of fisheries and landings. Ideally, the working papers contain much of the text needed to draft various assessment report segments, and the authors can ‘cut and paste’ relevant sections. There is no strict format imposed for Working Papers; as long as the relevant information is provided authors are encouraged to follow a standardized journal format of their choosing. Although working papers are not peer reviewed, they do provide an authorship opportunity for those who do much of the work on the stock assessment, and ideas developed in the working papers and advanced during the Workshop discussions may ultimately lead to peer-reviewed articles.

Documents in the Working Papers series become part of the SEDAR Administrative Record and are available upon request from the SEDAR staff. Authors shall submit electronic copies that are archived as .PDF files and posted to the SEDAR website. Those not available electronically will be scanned to create .PDF files.

The numbering convention includes a workshop designation, SEDAR series number, and a document number. For example, SEDAR4-DW-1 would designate working paper number 1 generated for the Data Workshop of the fourth SEDAR.

Research Documents

Research Documents include any peer reviewed articles provided as general background or documentation of data sets and assessment methods. Research documents will be numbered for tracking and distribution purposes, but should be cited appropriately if referenced in a SEDAR Assessment Report.

Documents provided for consideration at workshops become part of the SEDAR Administrative Record and are available upon request from the SEDAR staff. If electronic copies are not available, documents will be scanned and converted to .PDF.

Research documents are numbered sequentially within a SEDAR cycle. The numbering convention includes a workshop designation, the letters ‘RD’ to denote

research document, and a document number. For example, SEDAR4-RD-1 would designate research document number 1 of the fourth SEDAR.

Assessment Reports:

Assessment Reports are the final products of the SEDAR process. Reports prepared by each individual workshop are compiled by SEDAR staff into a single document consisting of multiple sections devoted to each workshop. Chief editors of each workshop report are noted on section cover pages. Assessment Reports are formatted according to the SEDAR Assessment Report Outline, as modified during the Workshops to meet the needs of the particular species or complex. Typically, a separate assessment report will be prepared for each species assessed in a SEDAR cycle.

Documents in the Assessment Reports series become part of the SEDAR Administrative Record and are available upon request from the SEDAR staff. Electronic copies are required so that the reports can be made available through the Internet.

The numbering convention includes the SEDAR series number, the designation 'AR' to indicate the Assessment Report series, and a document number. For example, SEDAR4-AR-1 would indicate Assessment Report 1 from the fourth SEDAR.

8.3.2 Working Paper Submission Guidelines

All SEDAR working papers shall be submitted electronically, preferably in Microsoft WORD format. Documents shall include a title, authors name and address, submission date, and SEDAR document number. Pages should be numbered. All documents should include an abstract or executive summary.

SEDAR document numbers will be provided by the SEDAR coordinator. Those wishing to submit documents for consideration at a SEDAR workshop should contact the Coordinator to request the next available document number.

Authors are discouraged from submitting .pdf files of working papers so that the inevitable editorial changes such as spelling corrections, addition of page numbers and headers, and inclusion of SEDAR document numbers can be accomplished easily. SEDAR staff will create pdf's for subsequent distribution and web posting.

All SEDAR documents are part of the Administrative record and therefore will be made available to the public. **Authors are responsible for ensuring that working papers contain no confidential data.**

SEDAR working papers are considered final once they are made available to a workshop panel. Minor revisions and corrections are allowed to the original document, although to substantial changes or additional content should be submitted as separate documents or addenda to the existing paper. This is to prevent confusion that stems from multiple versions of the same document. All revisions or additions to existing papers should be noted sequentially on the cover page with the appropriate date stamp. A summary of each revision should be included in the abstract or executive summary.

8.4 Appendix D. SEDAR Workshop Participation Guidelines

Concerns over selection and appointment of participants to SEDAR workshop panels and confusion surrounding the appointment process compelled the SEDAR Steering Committee to adopt expanded guidelines for workshop participation. One problem in particular involved uncertainty as to who is responsible for workshop panel appointments, as illustrated by members of special interest groups interested in participating in SEDAR workshops, particularly as review panelists, contacting the SEDAR Coordinator and the Councils to volunteer their services and request appointment to workshop panels. Other issues included uncertainty around those eligible for appointment to workshop panels and the process the Councils should follow in making appointments. A final concern involved identifying the range of expertise and knowledge necessary for each workshop panel to complete its charge.

The following guidelines are intended to clarify who may participate and how participants are selected. The goal is to provide enough formal guidance to ensure consistency and compliance with federal regulations and Council procedures, while preserving enough flexibility to respond to unforeseen circumstances. These guidelines will also help clarify the responsibilities of SEDAR staff and the Councils in identifying participants. Adhering to process and procedures in selecting participants is perhaps most critical for the Review Workshop, since this body has the task of establishing whether or not the assessment is technically sound.

NOAA General Counsel provided guidance on SEDAR participation when SEDAR was approved for all 3 Councils and NOAA Fisheries. This guidance stated that each Council would establish a SEDAR Advisory Panel (typically considered the SEDAR Pool) from which participants shall be selected for each workshop. All Workshop Panel participants appointed by a Council must be included in that Council's SEDAR Advisory Panel. The SEDAR Advisory Panel is governed by the same requirements as any other Council Panel. Employees of state and federal agencies, the Councils, and the Interstate Commissions must be appointed to the SEDAR Advisory Panel if they are to be appointed to a SEDAR Workshop Panel.

1. General Appointment Procedures

Participants for SEDAR workshop panels are appointed by the Councils from the membership of their SEDAR Advisory Panels. The Council requesting the assessment and having jurisdiction over the species assessed is responsible for appointing panelists. The SEFSC Director and SERO Administrator are responsible for submitting designees to the Council for appointment to workshop panels to provide expertise and represent their offices as appropriate.

In the event of joint jurisdiction, each Council with an interest makes appointments from within its SEDAR Advisory Panel. For a Review Workshop Panel where the number of panelists is loosely restrictive, when multiple Councils or Commissions have an interest in the species being assessed, the Councils and

Commissions shall each agree to an equitable division of the available seats when the SEDAR cycle is approved by the Steering Committee.

Each Council is responsible for establishing guidelines and procedures for making appointments. It is not necessary for these guidelines and procedures to be identical for each Council. Each Council is responsible for ensuring that the participants it appoints are eligible under Council Advisory Panel procedures.

When soliciting participants and making appointments, Councils should clearly indicate the expected level of participation and the nature of the workshops as described herein. Participants appointed to Workshop Panels are expected to participate in the entire workshop. The structure of the SEDAR workshops is such that many decisions are not made until near the end, after considerable deliberation and analyses. Further, reports are often not finalized until several weeks following the meeting. All participants should be informed that participation may involve considerable time and effort and that workshop sessions may extend beyond normal working hours (e.g., evening sessions are possible at all workshops). It is especially critical that Review Workshop Panelists participate in all stages of the Workshop. The need to draft reports during the workshop and bring those drafts to the Panel for review throughout the workshop dictates that Review Panel seats cannot ‘revolve’ among several individuals as particular species are addressed. Those having specific knowledge or interest of a single species or issue better serve the process through participation in Data and Assessment Workshops, whereas those with broader knowledge and strong analytical expertise are most appropriate as Review Workshop Panelists.

2. Suggested Participants

The following sections describe in general terms the expertise that is typically required for each workshop panel. The classifications are neither obligatory nor restrictive. Each Council is responsible for making those appointments it deems necessary for the task at hand.

2.1 Data Workshop

The Data Workshop Panel is charged with reviewing the full spectrum of input data, including fisheries statistics, monitoring programs, life history, and management history. This requires individuals from many disciplines possessing a broad range of skills and expertise. It is also the point in the SEDAR process where the anecdotal knowledge and first person observations of experienced fishermen and constituents are the most useful.

Suggested Participants:

- SEFSC Assessment Scientists
- Other NMFS Assessment Scientists
- Council SSC representatives
- Council Assessment Panel representatives
- Council Socio-economic Panel representatives
- Council Advisory Panel representatives

- SERO representatives
- Council/Commission Technical staff
- State Agency researchers, biologists, data collectors, analysts
- University assessment analysts
- Life history researchers, from NMFS, State Agencies, or Universities
- Marfin research grant recipients
- NMFS General Canvass representatives
- MRFSS representatives
- State data collection representatives (e.g., trip ticket program, FIN)
- Logbook Program representatives
- SE Headboat Survey representatives
- Cooperative Monitoring Program representatives (e.g., MARMAP, SEAMAP)
- NGO representatives
- Independent or contracted consultants
- Fishery or constituent representatives

2.2 Assessment Workshops.

Assessment Workshop panels must complete the assessment model and prepare the results. This requires a high level of technical expertise, and Assessment Workshop Panels should be composed primarily of assessment scientists.

Suggested Participants

- SEFSC Assessment Scientists
- Other NMFS Assessment Scientists
- Council SSC representatives
- Council Assessment Panel representatives
- Council Socio-economic Panel representatives
- Council Advisory Panel representatives
- SERO representatives
- Council/Commission Technical staff
- State Agency researchers, biologists, data collectors, analysts
- University assessment analysts
- NGO representatives or designees
- Independent or constituent group contracted consultants
- Fishery or constituent representatives from outside the AP's

2.3. Review Workshops.

Review Workshop panelists include 3 reviewers appointed through the CIE and a chair appointed by the SEFSC Director. The Director is allowed wide latitude in selecting a chair, and may consider Federal employees outside the SEFSC, current and former SSC members, retired employees, state agency employees, and academia. The chair should not be an employee of the SEFSC or SERO.

8.5 Appendix E. Review of SEDAR Workload and Scheduling

I. Number of SEDAR Cycles per year

The concept of 2 annual cycles was endorsed by the Steering Committee in January 2004. The timing of these cycles will be determined by the Steering Committee when it establishes assessment priorities. The particular labs assigned to a cycle will be determined by the SEFSC Director.

II. Assessments per Cycle

Limiting SEDAR cycles to 1 or 2 complete benchmark assessments was endorsed by the Steering Committee in January 2004.

III. Mixing of Jurisdictions or Separate Stocks of a Species

Limiting SEDAR cycles to a single jurisdiction (Council), except when Councils have joint FMP's or in some other way share jurisdiction over a unit stock was endorsed by the Steering Committee in January 2003.

IV. Increasing Assessment Productivity.

The concept of establishing a hierarchical review process was endorsed by the Steering Committee in January 2004. SEDAR will consist of both benchmark and update assessments. The primary focus is on conducting benchmark assessments. A limited number of update assessments can also be accommodated. Specific details for conducting assessment updates are included in the procedures.

8.6 Appendix F. SEDAR Schedule

1. SEDAR Benchmark Assessment List

SEDAR #	SPECIES	Year ¹
1	SAFMC Red Porgy	2002
2	SAFMC Vermilion Snapper/Black Sea bass	2003
3	SAFMC Yellowtail Snapper ASMFC Atlantic Menhaden / Croaker	2003
4	SAFMC Tilefish, Snowy Grouper	2004
5	SAFMC & GMFMC King Mackerel	2004
6	FL (SAFMC/GMFMC) Goliath Grouper & Hogfish Snapper	2004
7	GMFMC Red Snapper	2004
8	CFMC Yellowtail Snapper, Spiny Lobster REVIEW: FL (SAFMC/GMFMC) Spiny Lobster	2005
9	GMFMC Vermilion/Greater Amberjack/Gray Trigger	2005 F
10	SAFMC & GMFMC Gag	2006 S
11	Large Coastal Sharks	2006
12	GMFMC Red Grouper	2006 F
13	Small Coastal Sharks	2007
14	CFMC Yellowfin Grouper, Mutton Snapper, Queen Conch	2007 S
15	SAFMC Greater Amberjack, White Grunt	2007 F
16	GMFMC Yellowedge grouper, Tilefish	2008 S
17	SAFMC Spanish Mackerel, Black Sea Bass	2008 F
18	SA and Gulf red drum	2009 S
19	Hogfish. Atlantic YTS (update or benchmark) Review ASMFC menhaden and Croaker.	2009 F
20	SA/GM King Mackerel	2010 S
21	CFMC Yellowtail, spiny lobster, queen conch	2010 F
22	SA Red Grouper, Red snapper, Black grouper	2011
23	CFMC queen triggerfish, deepwater snappers, red hind	2011
24		
25		

* S = Spring, January – June Cycle; F = Fall, July – December Cycle.

** Final=Assessment Completed; Ongoing=workshops underway; Planning=scheduling and appointments initiated, workshops not begun; Scheduled=general timing scheduled, specific dates and appointments TBD approx. 2 months before beginning of cycle.

2. SEDAR Assessment Update Schedule

Benchmark #	Species	Scheduled Completion
2	SA Black Sea bass	April 2005
1	SA Red Porgy	May 2006
2	SA Vermillion Snapper	2007
4	SA Goldentile/Snowy Grouper	Early 2009
7	Gulf Red Snapper	Late 2009
8	FL Spiny Lobster	2010
5	SA/GM King Mackerel	TBD
9	GoM Greater Amberjack/ Vermilion Snapper/ Gray Triggerfish	TBD
10	SA/GOM Gag Grouper	TBD