

Observations and Recommendations from the SEDAR 28 Assessment Workshop

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Executive summary

A CIE contractor was employed to observe the assessment workshop, held in Miami, Florida, for Gulf of Mexico and South Atlantic Spanish Mackerel and Cobia as part of the SEDAR 28 process. During the Assessment workshop two groups, NMFS in Beaufort and Miami, came together to discuss model formulation and to explore aspects of surplus production, length-based, and age based cohort analysis. However, finalized data were not available to the analysts until just prior to the meeting. Despite the hard work of participants and staff, the lack of base runs made for a highly inefficient and frustrating meeting. Additionally the lateness of the data resulted in a delay of the process. These inefficiencies were further compounded by a lack of meeting leadership. To address these difficulties and to help avoid further problems, a number of observations are described and some recommendations are proposed.

Description of activities and Summary

The SEDAR 28 Assessment Workshop was held May 7th-11th, 2012 in Miami, Florida. The stocks under assessment at SEDAR 28 include Cobia and Spanish mackerel for both the SE US (South Atlantic) and the Gulf of Mexico; a total of four stocks. The assessment team comprised of two Main groups; those from NMFS Beaufort, NC and those from NMFS Miami, FL.

The general format for most SEDAR assessments is to first conduct a data workshop (held earlier this year), followed by an assessment workshop (this meeting), with a peer review scheduled later in the year. After the assessment process and findings from the peer review are finalized, that information is then passed to the respective management council's Scientific and Statistical committees who further deliberate on quotas and or management measures to be implemented.

During the assessment workshop, each team presented assessments for their respective stock and gathered comments from all present (excluding this observer). After gathering comments and suggestions each group would go back and make changes during the overnight or one of the many work sessions.

Each stock had at least two modeling approaches applied. Generally approaches consisted of a type of equilibrium surplus production model (ASPIC) and either a length (SS3) or age (BAM) based cohort analysis using maximum likelihood estimators (as outlined below). Bayesian alternatives were not suggested nor discussed.

Area	Species	Method
South Atlantic	Spanish Mackerel	BAM
		ASPIC
	Cobia	BAM
		ASPIC
Gulf of Mexico	Spanish Mackerel	Stock Synthesis 3
		ASPIC
	Cobia	Stock Synthesis 3
		ASPIC

By the end of the assessment workshop, however, ASPIC was dropped for both Gulf of Mexico Spanish Mackerel as well as South Atlantic Cobia. Further a number of problems were apparent in both SS3 and well as the BAM models. For example convergence issues still plague the SS3 configuration for Gulf of Mexico Spanish Mackerel, while the BAM model, if not highly constrained, is hitting bounds for South Atlantic Cobia. Further the group has started to explore other options for South Atlantic Cobia; including catch curve and other, more simplistic and less data hungry approaches.

It is nearly impossible to comment on the technical merits of the remaining model formulations given the difficulties encountered during this workshop. It became clear in the first few hours of the meeting on Monday the 7th that tangible results from this workshop were not going to materialize. Analysts had not gotten final 2011 data until the Friday before, after the close of business. As a result, neither group was able to have fully formulated base runs completed prior to the start of the meeting.

Additionally the data were not in the correct format needed for easy input into the above modeling approaches. This coupled with a lack of attendance by primary data handlers/analysts painfully slowed progress during the workshop. As a result, between a third and half of the workshop time was spent having the analysts incorporate the data rather than going over model diagnostics, or running sensitivity analyses. Even to date, the groups are still working on estimates of shrimp bycatch, an important mortality source for these stocks.

Progress was also hampered by a lack of meeting leadership. While staff performed admirably and to the best of their ability given their roles, the lack of a strong chair during the meeting resulted in a re-hashing of issues and frustratingly circular debate. While such can be useful in vetting all of the issues, when coupled with the lack of progress due to data difficulties, the leadership void compounded the inefficiencies.

That said, staff and the other participants performed well and professionally given the situation. In the end it was determined that more time was going to be needed between assessment and peer review (approximately 6 weeks) and that much of the work would be conducted via conference call/web meeting given budget constraints.

Recommendations

Again it is nearly impossible to make any recommendations on technical aspects with regard to the assessments. The work continues and what was presented during the workshop may look very different by the time the assessments are ready for review in the early to mid-fall 2012. However, some recommendations on the process and the role of the observer can be made at this time.

Process

It is critical that Assessment workshops not be conducted until the data are fully vetted, analyzed, and made available to the analysts. Assessment workshops should be where models are tested, diagnostics are examined, sensitivity analyses are performed, and consensus on modeling approaches and base runs finalized. This cannot happen if the analyst does not have

preliminary base runs completed prior to the start of the workshop. Analysts cannot complete that work unless the data are in hand and fully incorporated into the analysis well prior to the meeting. *As such, it is recommended that Assessment workshops not be scheduled prior to completion of the data report from the Data Working Group.* Further, adequate time from data working meeting to assessment meeting should account for lateness of the final data report, and subsequent data requests by the analysts. The current SEDAR guidelines suggest at least three months between data and assessment workshop. It is recommended that the guidelines be changed from “meeting” to “final report availability”.

One apparent difficulty noted during the workshop was a lack of participation from the primary data handlers. In many other venues those individuals responsible for querying data bases and performing important analyses attend the assessment workshop as well. Often these individuals can provide insight to the modelers and, if need be, re-analyze the raw data at the request of the primary model analyst. These important people were noticeably absent during the meeting, presumably due to budget constraints. The result was that often the primary model analysts had to request data and further modifications from someone in a remote location; who may or may not have been in the office at the time. In short, assessments, despite sophisticated modeling approaches used, are only as good as the data streams going into them. The data are an important element and often need to be manipulated during the assessment workshop. *As such, it is recommended that those responsible for much of the data handling be present at the assessment meeting with their respective raw data.* Such will allow the model analysts the ability to make requests and changes to the data inputs as the need arises.

Lack of strong leadership during the meeting hampered progress. It was clear that further time was lost as a result of circular and tangential discussions. This difficulty can be found in many workshops, but became an added burden given the data difficulties. Staff, while excellent at facilitating the meeting, simply does not have the authority to forge consensus and direct the discussion away from well-meaning, but fruitless areas. *Therefore it is recommended that the primary analyst(s) chair the meeting rather than SEDAR/SAFMC staff.*

CIE participation as observer

From the beginning it was not clear what the goal was for having a CIE observer at the workshop. In the current system CIE reviewers act as independent scientists that review and critique assessments used for management purposes. The purpose of having an “observer” who could not comment or shape the discussion versus their current role is still unclear. However, it should be noted that this may have not been the best assessment to gauge if an observer is worthwhile, given the data difficulties encountered.

If the goal is to increase communication between assessment and review workshops, then the report format and content should be re-appraised. If the goal is to provide expert advice during the assessment workshop, then an independent contractor could assist in model formulation and analysis.

Assuming that the goal was to provide a link between assessment and review workshop, some of that could be accomplished by a more detailed assessment workshop report. Some utility in having an observer, who also serves as reviewer, can be apparent, particularly for complex or

assessments containing a large number of species (ex., The Northeast Groundfish Assessment Review Meeting). Given that, a number of recommendations are outlined below should the need for CIE observers become apparent.

It is recommended that the CIE observer be embedded in the whole process, and not just part of it. Often available models and potential analyses are discussed at the data workshop or the conference calls before and after the assessment workshop. Having an observer only at the assessment defeats the purpose of an observer, as they are only observing a very small part of the process. As such if observation is the goal then the observer should be present at the data workshop, and all conference calls/web meetings.

It is recommended that the report from that observer be made available to the other reviewers with the assessment workshop report. This would allow reviewers to get insight from the observer as to where problems have come up, and how issues to date have been resolved. Further the observer could make suggestions of what diagnostics and sensitivity analyses might be appropriate.

If possible, it is recommended that the primary analysts and the reviewers meet via conference call/web meeting prior to the start of the review workshop. On that call reviewers, after digesting the assessment report and the observer's comments/recommendations, can give suggestions on what diagnostics and sensitivity analyses could be run prior to the review workshop. This would certainly shorten the review workshop, and allow the analysts to have some diagnostics and sensitivity analyses prepared ahead of time; rather than presenting them on Day 2. It should be noted that this will require some restraint on the reviewers/observers part; to not overload the primary analyst prior to the review workshop.

Some final thoughts and personal opinions

Overall it was an enjoyable meeting, despite the difficulties encountered. Staff and both assessment groups did a great job under difficult conditions. Also, I was impressed with the progress made during the meeting. However one has to wonder about the waste of resources, given that much of the time at the meeting was spent doing work that should have been accomplished beforehand. As such this may have not been the best meeting to explore the use of CIE observers.

I am uncertain as to the utility of having CIE observers. While it may be useful under certain limited situations and with some limited reviewers, overall my take was rather negative. As it is inappropriate for an art critic to review a painting in progress, it may be inappropriate for a CIE reviewer to witness the development of an assessment. All that truly matters, in my opinion, is the final product, and not how it was created.

Appendix 1: Statement of Work

Statement of Work for Dr. Matthew Cieri

External expert observer by the Center for Independent Experts

SEDAR 28 South Atlantic and Gulf of Mexico Spanish mackerel and cobia assessment workshop review

Scope of Work and CIE Process: The National Marine Fisheries Service's (NMFS) Office of Science and Technology coordinates and manages a contract providing external expertise through the Center for Independent Experts (CIE) to conduct independent peer reviews of NMFS scientific projects. The Statement of Work (SoW) described herein was established by the NMFS Project Contact and Contracting Officer's Technical Representative (COTR), and reviewed by CIE for compliance with their policy for providing independent expertise that can provide impartial and independent peer review without conflicts of interest. CIE expert is selected by the CIE Steering Committee and CIE Coordination Team to conduct the independent peer review of NMFS science in compliance the predetermined Terms of Reference (ToRs) of the peer review. The CIE expert is contracted to deliver an independent peer review report to be approved by the CIE Steering Committee. For this contract, the CIE expert will serve as an observer during the SEDAR assessment workshop to provide further scope and context to the subsequent peer review to be conducted during the SEDAR review meeting. This SoW describes the work tasks and deliverable of the CIE expert, and **Annex 1** provides a summary report format for the CIE expert's observations and recommendations from the SEDAR 28 assessment workshop. Further information on the CIE process can be obtained from www.ciereviews.org.

Project Description The SEDAR 28 will be a compilation of data, an assessment of the stock, and the assessment review conducted for South Atlantic and Gulf of Mexico Spanish mackerel and cobia. The stocks assessed through SEDAR 28 are within the jurisdiction of the South Atlantic and Gulf of Mexico Fisheries Management Councils and the states of Texas, Louisiana, Mississippi, Alabama, Florida, Georgia, South Carolina, and North Carolina. The SEDAR review process includes a data workshop, assessment workshop, and assessment review. This contract is for a CIE expert to attend the assessment workshop as an observer. The intent for contracting the CIE observer during the assessment workshop is to provide additional scope and context from the SEDAR 28 assessment workshop schedule 7-11 May 2012 for the subsequent CIE peer review to be conducted at the SEDAR 28 review scheduled in August 2012. During this contract, the CIE observer shall not participate in any manner with the development of the science and shall not serve as a peer reviewer during the SEDAR 28 assessment workshop. During the SEDAR assessment workshop, an Assessment Panel will be conducting analyses, error corrections and sensitivity runs for the assessment. The CIE observer shall not be involved with providing any feedback to the Assessment Panel as it makes assumptions and models the data during the assessment workshop process. However, the CIE observer shall write a summary of observations and recommendations from the assessment workshop, and this summary shall be attached to the CIE expert's independent peer review report resulting from the subsequent

SEDAR 28 review scheduled in August 2012. The CIE expert will serve as an observer during the SEDAR 28 assessment workshop, and the agenda for the SEDAR 28 assessment workshop is attached as **Annex 2**. The Terms of Reference (ToRs) are attached in **Annex 3** to provide background information for the SEDAR 28 assessment workshop.

Requirements for the CIE Observer: The contract is for one CIE expert who shall attend as an observer in the SEDAR 28 assessment workshop scheduled in Miami, Florida during 7-11 May 2012. The intent for contracting the CIE observer is to provide scope and context for the CIE peer review scheduled at a later date. During this contract, the CIE observer shall not participate in any manner with the development of the science and shall not serve as a peer reviewer during the SEDAR 28 assessment workshop. A subsequent contract will require this CIE expert to participate and conduct peer review during the SEDAR 28 assessment review scheduled in Atlanta, Georgia during 6-10 August 2012.

The CIE observer shall be thoroughly familiar with various subject areas involved in stock assessment, statistics, fisheries science, and marine biology sufficient to complete the primary task of providing peer-review advice in compliance with the workshop Terms of Reference. The CIE observer's duties shall not exceed a maximum of 10 days to complete all work tasks described herein.

Location of tasks associated with the SEDAR 28 assessment workshop: The CIE observer shall attend the SEDAR 28 assessment workshop scheduled in Miami, Florida during 7-11 May 2012.

Statement of Tasks: The CIE observer shall complete the following tasks in accordance with the SoW and Schedule of Milestones and Deliverables herein.

Prior to the Peer Review: Upon completion of the CIE observer selection by the CIE Steering Committee, the CIE shall provide the CIE observer information (full name, title, affiliation, country, address, email) to the COTR, who forwards this information to the NMFS Project Contact no later the date specified in the Schedule of Milestones and Deliverables. The CIE is responsible for providing the SoW and ToRs to the CIE reviewers. The NMFS Project Contact is responsible for providing the CIE observer with the background documents, reports, foreign national security clearance, and other information concerning pertinent meeting arrangements. The NMFS Project Contact is also responsible for providing the Chair a copy of the SoW in advance of the SEDAR 28 assessment workshop meeting. Any changes to the SoW or ToRs must be made through the COTR prior to the commencement of the meeting.

Foreign National Security Clearance: If the CIE observer is required to attend the meeting held at a government facility, the NMFS Project Contact will be responsible for obtaining the Foreign National Security Clearance approval for the CIE observer if the observer is a non-US citizen. For this reason, the CIE observer shall provide requested information (e.g., first and last name, contact information, gender, birth date, passport number, country of passport, travel dates, country of citizenship, country of current residence, and home country) to the NMFS Project Contact for the purpose of security clearance, and this information shall be submitted at least 30 days before the peer review in accordance with the NOAA Deemed Export Technology Control

Program NAO 207-12 regulations available at the Deemed Exports NAO website:

<http://deemedexports.noaa.gov/>

http://deemedexports.noaa.gov/compliance_access_control_procedures/noaa-foreign-national-registration-system.html

Pre-review Background Documents: Two weeks before the meeting, the NMFS Project Contact will send (by electronic mail or make available at an FTP site) to the CIE observer the necessary background information and reports to prepare for the meeting. In the case where the documents need to be mailed, the NMFS Project Contact will consult with the CIE Lead Coordinator on where to send documents. CIE observer is responsible only for the pre-review documents that are delivered in accordance to the SoW scheduled deadlines specified herein. The CIE observer shall read all documents designated as mandatory reading in preparation for the meeting.

SEDAR 28 assessment workshop meeting: The CIE observer shall attend the SEDAR 28 assessment workshop scheduled in Miami, Florida during 7-11 May 2012. The CIE observer shall make the necessary observations to provide additional scope and context to the following SEDAR 28 review scheduled in Atlanta, Georgia during 6-10 August 2012. However, the CIE observer shall not participate in any manner with the development of the science and shall not serve as a peer reviewer during the SEDAR 28 assessment workshop. The NMFS Project Contact is responsible for providing necessary meeting information to the CIE observer. The NMFS Project Contact is also responsible for ensuring that the Chair understands the contractual role of the CIE observer as specified herein. The CIE Lead Coordinator can contact the Project Contact to confirm any meeting arrangements for the CIE observer.

Contract Deliverables – Addendum to the independent CIE Peer Review report: The CIE expert shall complete a summary of observations and recommendations from the SEDAR assessment workshop during 7-11 May 2012, and this summary will be attached as an addendum to the CIE expert's independent peer review report resulting from the SEDAR review in 6-10 August 2012.

Specific Tasks for CIE Reviewers: The following chronological list of tasks shall be completed by each CIE reviewer in a timely manner as specified in the **Schedule of Milestones and Deliverables**.

- 1) Conduct necessary pre-review preparations, including the review of background material provided by the NMFS Project Contact in advance of the assessment workshop.
- 2) Attend as an observer during the SEDAR 28 assessment workshop in Miami, Florida during May 7-11, 2012.
- 3) Produce a summary of observations and recommendations from the SEDAR 28 assessment workshop.
- 4) This summary will be attached as an addendum to the independent CIE peer review report from the SEDAR 28 review scheduled in Atlanta, Georgia during August 6-10, 2012 (the CIE observer will be contracted to participate as a CIE peer reviewer during the SEDAR 28 review).
- 5) No later than August 24, 2012, the CIE expert submit the summary as an addendum to the independent peer review report addressed to the "Center for Independent Experts," and sent to Mr. Manoj Shivlani, CIE Lead Coordinator, via email to

shivlanim@bellsouth.net, and Dr. David Sampson, CIE Regional Coordinator, via email to david.sampson@oregonstate.edu.

Schedule of Milestones and Deliverables: CIE shall complete the tasks and deliverables described in this SoW in accordance with the following schedule.

2 April 2012	CIE sends the selected CIE expert contact information to the COTR, who then sends this to the NMFS Project Contact
30 April 2012	NMFS Project Contact sends the CIE expert the pre-meeting documents
7-11 May 2012	The CIE expert attends as an observer during the SEDAR 28 assessment workshop in Miami, Florida
30 May 2012	The CIE expert submits a summary of observations and recommendations from the SEDAR 28 assessment workshop to the CIE Lead Coordinator and CIE Regional Coordinator; the CIE steering committee will review this as an addendum to the CIE peer review report in September.
6-10 August 2012	The CIE expert will participate as a peer reviewer during the SEDAR review scheduled in Atlanta, Georgia (this will be a subsequent contract)
12 September 2012	The CIE summary from the SEDAR 28 assessment workshop will be attached as an addendum to the independent peer review report resulting from the SEDAR 28 review (as specified in the subsequent contract)

Modifications to the Statement of Work: This ‘Time and Materials’ task order may require an update or modification due to possible changes to the terms of reference or schedule of milestones resulting from the fishery management decision process of the NOAA Leadership, Fishery Management Council, and Council’s SSC advisory committee. A request to modify this SoW must be approved by the Contracting Officer at least 15 working days prior to making any permanent changes. The Contracting Officer will notify the COTR within 10 working days after receipt of all required information of the decision on changes. The COTR can approve changes to the milestone dates, list of pre-review documents, and ToRs within the SoW as long as the role and ability of the CIE expert to complete the deliverable in accordance with the SoW is not adversely impacted.

Acceptance of Deliverables: The CIE summary from the SEDAR assessment workshop shall be attached as an addendum to the CIE independent peer review report resulting from the SEDAR review. The report will be reviewed by the CIE Lead Coordinator, Regional Coordinator, and Steering Committee, and then the final report shall be sent to the COTR for final approval as the contract deliverable. As specified in the Schedule of Milestones and Deliverables, the CIE shall send via e-mail the contract deliverable to the COTR (William Michaels, via William.Michaels@noaa.gov).

Distribution of Approved Deliverables: Upon acceptance by the COTR, the CIE Lead Coordinator shall send via e-mail the final CIE report in *.PDF format to the COTR. The COTR will distribute the CIE reports to the NMFS Project Contact and Center Director.

Support Personnel:

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Key Personnel:

NMFS Project Contact:

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Annex 1: Format for the CIE observer's summary report

SEDAR 28 South Atlantic and Gulf of Mexico Spanish mackerel and cobia assessment workshop review

Executive summary

1. Description of activities
2. Observations and findings
 - a. Summary of items discussed at meeting
 - b. Observations on the technical quality of assessment
 - c. Observations on the process used in developing and improving the assessment
 - d. Other observations
3. Recommendations
 - a. Recommendations as related to the assessment
 - b. Recommendations as related to the assessment process
 - c. Recommendations on the use of a CIE observers

Annex 2. Tentative SEDAR 28 assessment workshop agenda with daily schedule and tasks. Gulf and South Atlantic Cobia and Spanish Mackerel Assessment Workshop Goals: (1) resolve any data issues and document data changes; (2) select base model and sensitivity configurations; (3) estimate population parameters; (4) select preferred model; (5) develop projections; (6) estimate SFA benchmarks and evaluate stock status; (7) prepare a 1st draft Assessment Workshop report;

	Monday, May 7	Tuesday, May 8	Wednesday, May 9	Thursday, May 10	Friday, May 11
Daily Overview	<i>Review & resolve data issues, present initial models.</i>	<i>Approve continuity runs & base configuration; ID sensitivity runs.</i>	<i>Evaluate sensitivities; select preferred run; projection & benchmark methods</i>	<i>Compare & contrast models; SFA parameters & Status Determination</i>	<i>Review results & conclusions in draft reports; Research recommendations.</i>
AM I 8:00 – 9:45		1. Finish model presentations 2. Continuity Model Presentations	Discussion - compare models and review new information	- Consensus, preferred, Status determination	Continue discussions...
9:45 - 10:00	<i>AM Break</i>				
AM II 10:00 - 11:30		Discussion - continuity - base configurations	Discussion - compare models and review new information	Depending on progress – discuss uncertainty, projections	- Make research recommendations - Wrap up
11:45 - 1:00	<i>LUNCH</i>				
PM I 1:00 – 3:30	1. Introduction 2. Data review 3. Model Presentations	Discussion - continuity - base configurations	Discussion - compare models and review new information	Continue discussions...	ADJOURN by 1:00 PM
3:30-3:45	<i>PM BREAK</i>				
PM II 3:45 - 5:30	1. Continue Model presentations	Discussion - sensitivities - precision & uncertainty	- Finalize base run, sensitivities	Continue discussions...	
Milestones	1. Final data decisions 2. Assign roles & tasks	1. Base configuration 2. Sensitivity/Uncertainty run list	Preferred models. Consensus Discussion Stock Status	Stock Projections.	1. Final base run and sensitivities 2. All files on server
Homework	Review Materials Data Section text	Finish Base & Continuity Runs. Sensitivity Runs.	Final preferred runs.	Any final runs.	

Annex 3: Terms of Reference

SEDAR 28 South Atlantic and Gulf of Mexico Spanish mackerel and cobia assessment workshop review

The terms of reference for the SEDAR 28 assessment workshop will be provided to the CIE observer as background information.