# Reviewer's Report of SEDAR-13 Small Coastal Shark Complex Stock Assessment Review

By

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Prepared for

**Center for Independent Experts**

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**Contents**

# 1. Executive Summary

## a. Impetus and goals for the review

A workshop was convened in Panama City, FL to review the assessments of the Small Coastal Shark Complex, which were assessed as part of the SEDAR-13 process. The review was undertaken by three CIE experts and was chaired by an independent chair appointed by the SEFSC. The Review Panel was not requested to provide management advice.

During the Review Panel meeting, reviewers participated in panel discussions on assessment methods, data, validity, results, recommendations, and conclusions as guided by the Terms of Reference. The reviewers also contributed to a Peer Review Consensus Summary report.

The review panel was provided with a summary report of a data workshop and the assessment workshop as well as supporting working papers. The panel were assisted by the assessment analysts. The documentation was well prepared and greatly assisted the efficiency of the meeting.

## b. Main conclusions and recommendations

The panel generally supported the findings of the assessment workshop that finetooth shark was not overfished and that overfishing was not occurring, and that blacknose was overfished and that overfishing was occurring. The Panel did not fully agree with the status of the Atlantic sharpnose and bonnethead shark as assessed in the Assessment Workshop report. The principal source of qualification was the variability in estimated F, which meant that the point estimate of F for 2005 did not provide adequate assurance on the state of fishing relative to MSY reference points.

A more detailed and comprehensive analysis of the CPUE series would be desirable to evaluate the utility of the many series available. A rigorous and objective scientific protocol should be developed against which CPUE series are evaluated as a basis for inclusion in assessments. This should include, *inter alia*, statistical design, spatial coverage and relevance to target species. This would avoid vulnerability to personal preference in the choice of indices.

Sensitivity runs in the assessments should examine the robustness of stock status relative to the biological parameters that determine MSY. These include values for M, growth, fecundity, selectivity and the form of the stock recruitment curve.

Projection software tools should be developed that can incorporate uncertainty in the initial conditions and capture process error more comprehensively for the forecast period.

### c. Interpretation of the findings with respect to conclusions and management advice

The Review workshop identified process error, especially in F as a problem in determining stock status relative to MSY reference points. Further consideration needs to be given to a more robust means of interpreting stock status than the procedure of simply using the most recent data year. It is also important for managers to know the probability of exceeding reference points in the medium term, even if present stock status is judged satisfactory.

The panel felt that the assessments of the four individual species provided a better insight into stock status that the combined SCS complex assessment. These species specific assessments should form the basis of management advice.

## 2. Introduction

### a. Background

The review meeting arose from the following request:

*NMFS-SEFSC requests the assistance of three fisheries assessment scientists from the CIE to serve as technical reviewers for the SEDAR 13 review panel that will consider assessments of the Small Coastal Shark Complex (SCS), Atlantic sharpnose shark, finetooth shark, blacknose shark, and bonnethead shark.*

### b. Terms of Reference

The specific duties of the reviewers are contained in the Statement of Work appended to this report. The specific terms of reference for the SEDAR-13 Review Workshop are also given in the same document.

### c. Panel membership

Joe Powers (chair)
Cynthia Jones
Jean-Jacques Maguire
Robin Cook

### 1. Date and place

The review workshop took place at the Bay Point Marriott Resort in Panama City, Florida from 1:00 p.m. Monday, August 6, 2007 through 1:00 p.m. Friday, August 10, 2007.

## 2. Acknowledgements

Thanks are due to Enric Cortés, Liz Brooks and Katie Siegfried for their work in presenting the assessments and providing additional runs; Julie Neer for meeting organisation and Ivy Baremore for taking notes of the meeting.

# 3. Summary of Available Information

The principal information provided consisted of the SEDAR 13 Data Workshop Summary report and the SEDAR 13 Assessment Summary Report. The working documents presented at these two workshop meetings were also provided. The documents were made available on the 11th August. They are listed in the Bibliography.

Compared with other review processes (SARCs and STAR panels), the standard of documentation was extremely high. The two principal data and assessment reports were very clearly presented and were complete. They were also made available well before the meeting. This made the effectiveness of the Review meeting much greater. All those concerned in the process should take a great deal of credit for this.

# 4. Review of Information used in the Assessment

## a. Stock structure

Limited information was available on stock structure. There are some differences in growth rates, fecundity and spawning frequency between the Gulf of Mexico and the Atlantic for the various species in the SCS complex. However, limitations in the data available for assessments meant that all stocks were assessed as single stock units.

## b. Life history data

The SEDAR 13 Small Coastal Sharks Data Workshop Report summarises the life history data. The workshop recommended values to be used in assessments. For some values such as growth and fecundity these were based on actual observations. Conventional methods were used to estimate natural mortality based on observed maximum age and the lowest value from a range of methods was selected. This choice may be perceived as biased and needs to be thought through carefully. It would be prudent to use other values of M in sensitivity runs or to estimate M from within the assessment model, perhaps using the estimates as priors in the model.

Other parameter values were derived from a life table approach. In one case (finetooth shark) this gave a negative value for intrinsic rate of increase (r) and it was replaced using the value adopted in the previous assessment in 2002.

### c. Catch data

Catch data present many challenges because of poor species detail in official recorded landings, a high proportion of the catch being taken as bycatch in the shrimp fishery and a large component taken in recreational fisheries. These latter two portions of the catch have therefore had to be raised from samples or surveys and are subject to estimation error. This error has not been quantified and may have implications in the values of F estimated in the SPASM model. This is because the model effectively treats the catch as exact and hence all errors in the catch appear in the estimates of F.

Various minor corrections to the catch data were made by the Assessment Workshop in an appropriate manner.

### d. Abundance indices

A very large number of abundance indices are available both from fishery dependent and fishery independent sources. The Data Workshop recommended the series that should be used in assessments based on their length and geographical coverage. The indices are aggregate values that do not contain age or size information. Some series distinguish juveniles and adults.

The choice of indices used in the assessment, while sensible, does appear somewhat ad hoc and may be influenced by individual personal preference. It would be desirable to try to eliminate this vulnerability by adopting a more explicit protocol for selecting series based on clear scientific criteria. It would also be desirable to undertake a more thorough analysis of the abundance series to investigate whether or not they are measuring a consistent signal. Given the plethora of series there is a very real danger of a selecting series that is in effect random numbers.

### e. Length/age composition

Very limited age and length information is available. Age/length information was not used explicitly in the assessments. However, gear selectivity estimates were derived from inspection of aggregate size and age data and used in assessments.

Since length data do actually exist it would be worth considering using such data directly in the assessment model.

### f. Effort

Effort data were not available for assessments. However, the SPASM assessment method modelled effort process error.

## 5. Review of the Assessment Results

### a. Methods

Three methods were used. These were a Bayesian Surplus Production model (BSP), a Winbugs state-space Bayesian surplus production model and a State-space age structured production model (SPASM). All methods are documented and have been used before in other assessments. SPASM is designed to estimate both observation

error and process error. It was the principal assessment tool used to evaluate stock status for blacknose, Atlantic sharpnose and bonnethead sharks. All models allow the incorporation of prior information. The methods are all appropriate given the data available and the species concerned.

## b. Abundance

Estimated abundance trends were influenced mostly by the catch data. The abundance indices were generally not fit well because they are highly variable and show conflicting trends. All four species show a long term downward trend though only blacknose was clearly in the overfished zone as determined by the assessment.

## c. Fishing mortality

For blacknose, the stock was considered to be suffering from overfishing, while finetooth was not. It was less clear in the case of Atlantic sharpnose and bonnethead where there is high annual variability in estimated F. This is the result of the variability in the catch estimates, which translate in the model estimates of F. It is unclear whether this variability is representing true process error or is the result of sampling error because the model fits the catches almost exactly. As a result the F value for the most recent year is probably not a robust estimate of the state of overfishing. For both sharpnose and bonnethead, the 2005 value suggests no overfishing but values in the recent past exceed the Fmsy threshold, meaning that both stocks may be exposed to periodic overfishing.

## d. Uncertainty

Uncertainty is characterized in the priors, plots of model fits to the data and likelihood profiles of the principal quantities of interest. Sensitivity analyses also provide some indication of the uncertainty associated with model assumptions. These methods are all standard and appropriate. The choice of sensitivity runs was quite limited and perhaps does not explore the full range of uncertainty. Given the significance of MSY in the management of these stocks it is particularly important to examine sensitivities to those values that influence the calculation of MSY reference points. This will include biological parameters relating to M, maturity, growth, fecundity and the structural assumption about the stock-recruitment curve. It would be worth exploring alternative stock recruitment functions as robustness tests.

## e. Projections

Where the Assessment Workshop considered the stock to be not overfished and that overfishing was not occurring no forward projections were run. For some stocks, given the proximity of F to Fmsy, its variability and the continuous decline of SSF toward its MSY threshold, there would be some merit in performing a forward projection to evaluate the probability of exceeding the reference points in the medium term. Such projections would need to capture the variability in F and the other major sources of uncertainty. They would provide managers with an indication of developing problems and whether intervention was appropriate.

Where projections were presented (i.e. blacknose) the method used only gives an indication of the central tendency in the population trajectory and does not give any

real indication of the uncertainty associated with the forecast. This is a severe limitation given the uncertainty in the assessment.

### f. Other

The panel also evaluated the combined assessment of the SCS complex. This suggests that the complex is not suffering from overfishing and is not overfished. This status evaluation is not consistent with the findings of the individual species assessments. The Panel felt that there was greater confidence in the results of the individual species assessments and that these should form the basis of management advice, rather than the combined assessment.

## 6. Review of Scientific Advice

The Review Workshop was not asked to give advice.

## 7. Recommendations

### a. Data collection and analyses

A more detailed and comprehensive analysis of the CPUE series would be desirable to evaluate the utility of the many series available. A rigorous and objective scientific protocol should be developed against which CPUE series are evaluated as a basis for inclusion in assessments. This should include, *inter alia,* statistical design, spatial coverage and relevance to target species. This would avoid vulnerability to personal preference.

### b. Assessment methods

Sensitivity runs in the assessments should examine the robustness of stock status relative to the biological parameters that determine MSY. These include values for M, growth, fecundity, selectivity and the form of the stock recruitment curve.

### c. Other

Projection software tools should be developed that can incorporate uncertainty in the initial conditions and capture process error more comprehensively for the forecast period.

The Review workshop identified process error, especially in F as a problem in determining stock status relative to MSY reference points. Further consideration needs to be given to a more robust means of interpreting stock status than the procedure of simply using the most recent data year. It is also important for managers to know the probability of exceeding reference points in the medium term, even if present stock status is judged satisfactory.

# 10. Appendices

## a. Bibliography of all material provided

**Working Papers**

SEDAR 13-AW-01 Cortés: Assessment of Small Coastal Sharks, Atlantic sharpnose, Bonnethead, Blacknose and Finetooth Sharks using Surplus Production Methods

SEDAR 13-AW-02 Siegfried et al: Determining Selectivities for Small Coastal Shark Species for Assessment Purposes

SEDAR 13-AW-03 Siegfried and Brooks: Assessment of Blacknose, Bonnethead, and Atlantic Sharpnose Sharks with a State-Space, Age-Structured Production Model

SEDAR 13-DW-03: Bethea, D.M., L. Hollensead, and J.K. Carlson Preliminary tag and recapture data of small coastal sharks (Atlantic sharpnose shark, *Rhizoprionodon terraenovae*, blacknose shark, *Carcharhinus acronotus*, bonnethead shark, *Sphyrna tiburo*, and finetooth shark, *C. isodon*) in the northeastern Gulf of Mexico

SEDAR 13-DW-08 Carlson, J.K. and J. Loefer Life history parameters for Atlantic sharpnose sharks, *Rhizoprionodon terraenovae*, from the United States South Atlantic Ocean and northern Gulf of Mexico

SEDAR 13-DW-11 Carlson, J.K., M. Drymon, and J.A. Neer Life history parameters for finetooth sharks, *Carcharhinus isodon*, from the United States South Atlantic Ocean and northern Gulf of Mexico.

SEDAR 13-DW-17 Driggers III, W.B., G.W. Ingram, Jr., M.A. Grace, J.K. Carlson, G.F. Ulrich, J.A. Sulikowski, and J.M. Quattro Life history and population genetics of blacknose sharks, *Carcharhinus acronotus*, in the South Atlantic Bight and the northern Gulf of Mexico

SEDAR 13-DW-23 Kohler, N. and P. Turner Preliminary Mark/Recapture Data for Four Species of Small Coastal Sharks in the Western North Atlantic

SEDAR 13-DW-24 Lombardi-Carlson, L.A.
Life history traits of bonnethead sharks, *Sphyrna tiburo*, from the eastern Gulf of Mexico

SEDAR 13-DW-36 Tyminski, J., R.E. Hueter, A. J. Ubeda
Tag-recapture results of small coastal sharks (*Carcharhinus acronotus, C. isodon, Rhizoprionodon terraenovae,* and *Sphyrna tiburo*) in the Gulf of Mexico

SEDAR 13-DW-39 Wiley, T. and C.A. Simpfendorfer
Range extension: occurrence of the finetooth shark (*Carcharhinus isodon*) in Florida Bay

SEDAR 13-DW-07 J.K. Carlson and E. Cortés Gillnet selectivity of small coastal sharks off the southeastern United States

SEDAR 13-DW-15 E. Cortés and J.A. Neer Updated catches of Atlantic small coastal sharks

SEDAR 13-DW-20 L. Hale, I. Baremore, J. Carlson, A. Morgan, and G. Burgess Bottom Longline Observer Program: Small Coastal Shark Catch and Bycatch 1994 to 2005

SEDAR 13-DW-32 S. Nichols Bycatch of small coastal sharks in the offshore shrimp fishery

SEDAR 13-DW-35 K.I. Siegfried Estimation of bycatch of small coastal sharks in the shrimp trawl fishery in the US South Atlantic

SEDAR 13-DW-40 J. Wilson and M. Clark Small Coastal Sharks Collected Under the Exempted Fishing Program Managed by the Highly Migratory Species Management Division

SEDAR 13-DW-05 Carlson, J. Standardized catch rates of small coastal sharks from a fishery-independent longline survey in northwest Florida

SEDAR 13-DW-06 Carlson, J. and Bethea, D.
Standardized catch rates of small coastal sharks from a fishery-independent gillnet survey in northwest Florida

SEDAR 13-DW-14 Cortés, E. and Boylan, J. Standardized catch rates of small coastal sharks from the SEAMAP-South Atlantic shallow water trawl survey

SEDAR 13-DW-18 Fisher, M. Fishery-Independent Catch of Small Coastal Sharks in Texas Bays, 1975-2006

SEDAR 13-DW-19 Grubbs, R., Romine, J., and Musick, J.
Occurrence of small coastal sharks and standardized catch rates of Atlantic sharpnose sharks in the VIMS Longline Survey: 1974-2005

SEDAR 13-DW-21 Hoffmayer, E. and Ingram, W. Catch rates and size composition of small coastal sharks collected during a gillnet survey of Mississippi coastal waters during 2001-2006

SEDAR 13-DW-22 Ingram, W., Driggers, W., Grace, M., Henwood, T., Jones, L., and Mitchell, K. Catch rates, distribution and size composition of small coastal sharks collected during NOAA Fisheries Bottom Longline Surveys from the U.S. Gulf of Mexico and U.S. Atlantic Ocean.

SEDAR 13-DW-27 McCandless, C. and Belcher, C.Standardized catch rates of small coastal sharks from the Georgia COASTSPAN and GADNR penaeid shrimp and blue crab assessment surveys

SEDAR 13-DW-28 McCandless, C. and Hoey, J Standardized catch rates for Atlantic sharpnose sharks *Rhizoprionodon terraenovae* from exploratory longline surveys conducted by the Sandy Hook, NJ and Narragansett, RI labs: 1961-1991

SEDAR 13-DW-29 McCandless, C. and Natanson, L
Standardized catch rates for Atlantic sharpnose sharks from the NMFS northeast longline survey

SEDAR 13-DW-30 McCandless, C., Ulrich, G., Hendrix, C., and Frazier, B.
Standardized catch rates of small coastal sharks from the South Carolina
SEDAR 13-DW-31 Nichols, S. Indexes of abundance for small coastal sharks from the SEAMAP trawl surveys

SEDAR 13-DW-34 Schwartz, F., McCandless, C., and Hoey, J. Trends in relative abundance of shark species caught during a University of North Carolina longline survey between 1972 and 2005 in Onslow Bay, NC

SEDAR 13-DW-37 Tyminski, J., Ubeda, A., Hueter, R., and Morris, J.Relative abundances of blacknose sharks, *Carcharhinus acronotus*, from coastal shark surveys in the eastern Gulf of Mexico, 2001-2006

SEDAR 13-DW-38 Ubeda, A., Tyminski, J., and Hueter, R. Relative abundance of bonnethead, Sphyrna tiburo, and Atlantic sharpnose sharks, *Rhizoprionodon terraenovae*, in two Florida Gulf estuaries, 1995-2004

SEDAR 13-DW-09 Carlson, J., Bethea, D., and Baremore, I. The directed shark drift gillnet fishery: Characterization of the small coastal shark catch, average size and standardization of catch rates from observer data

SEDAR 13-DW-10 Carlson, J., Osborne, J., and Schmidt, T. Standardized catch rates of bonnetheads from the Everglades National Park creel survey, 1978-2004.

SEDAR 13-DW-12 Carlson, J., Cortés, E., Morgan, A., Hale, L., Bethea, D., Baremore, I., and Burgess, G. Standardized catch rates of small coastal sharks from the commercial shark fishery longline observer program, 1994-2005

SEDAR 13-DW-16 Cortés, E. Standardized catch rates of bonnethead, Atlantic sharpnose shark, and the small coastal shark complex from the Marine Recreational Fishery Statistics Survey (MRFSS)

SEDAR 13-DW-25 Mello, J., Gervelis, B., and McCandless, C. Standardized catch rates of Atlantic sharpnose sharks, *Rhizoprionodon terraenovae*, observed by the Northeast Fisheries Observer Program in the gillnet fishery from 1995-2005

SEDAR 13-DW-26 McCarthy, K Standardized catch rates for small coastal sharks from the Untied States Gulf of Mexico and south Atlantic gillnet fishery, 1998-2005

SEDAR 13-DW-41 McCarthy, K. Standardized catch rates for small coastal sharks from the United States Gulf of Mexico and South Atlantic bottom longline fishery, 1996-2005

**Workshop Reports**

SEDAR 13 Small Coastal Sharks Data Workshop Report, March 2007

SEDAR 13 Small Coastal Sharks Assessment Workshop Report, July 2007

## b. Statement of Work

Consulting Agreement between Dr. Robin Cook and NTVI

Statement of Work

SEDAR 13 Stock Assessment Review

Small Coastal Sharks

August 6 - 10, 2007

Panama City, Florida

**SEDAR Overview:**

The Small Coastal Shark Complex (SCS), Atlantic sharpnose, finetooth, blacknose, and bonnethead sharks are currently managed by the Highly Migratory Species (HMS) Division of the National Marine Fisheries Service. For the current assessment, it was recommended that the assessment follow the guidelines set forth by the South East Data, Assessment, and Review (SEDAR) process. Although SEDAR is a joint process for stock assessment and review of the South Atlantic, Gulf of Mexico, and Caribbean Fishery Management Councils; NOAA Fisheries, SEFSC and SERO; and the Atlantic and Gulf States Marine Fisheries Commissions, it was felt that this process would work for the SCS as well. SEDAR is organized around three workshops: data, assessment, and review. Input data are compiled during the data workshop, population models are developed during the assessment workshop, and an independent peer review of the data and assessment models is provided by the review workshop. SEDAR documents include working papers prepared for each workshop, supporting reference documents, and a SEDAR Stock Assessment Report. The SEDAR Stock Assessment Report consists of a data report produced by the data workshop, a stock assessment report produced by the assessment workshop, and a peer review consensus report and advisory report prepared by the review workshop.

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

The review workshop provides an independent peer review of SEDAR stock assessments. The term review is applied broadly, as the review panel may request additional analyses, correction of errors, and sensitivity runs of the assessment model

provided by the assessment workshop. The review panel is ultimately responsible for ensuring that the best possible assessment is provided through the SEDAR process. The review panel task is specified in Terms of Reference.

The SEDAR 13 review panel will be composed of three Center for Independent Experts (CIE)-appointed reviewers, and a chair appointed by the SEFSC director. Council staff, HMS staff, and Commission staff, may attend as observers. Members of the public may attend SEDAR review workshops.

**CIE Request:**

NMFS-SEFSC requests the assistance of three fisheries assessment scientists from the CIE to serve as technical reviewers for the SEDAR 13 review panel that will consider assessments of the Small Coastal Shark Complex (SCS), Atlantic sharpnose shark, finetooth shark, blacknose shark, and bonnethead shark. Reviewer tasks are listed below.

The stocks assessed through SEDAR 13 are within the jurisdiction of NOAA Fisheries Service, Highly Migratory Species Division.

The review workshop will take place at the Bay Point Marriott Resort in Panama City, Florida from 1:00 p.m. Monday, August 6, 2007 through 1:00 p.m. Friday, August 10, 2007.

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

Please contact Julie A Neer (Shark SEDAR Coordinator; 850-234-6541 ext. 240 or Julie.neer@noaa.gov) for additional details.

**Hotel arrangements:**

Marriott's Bay Point Resort Village
4200 Marriott Drive
Panama City, Florida 32408
Reservations: 1-800-644-2650

Group “NOAA Fisheries” Rate: $99 + tax; guaranteed through July 6, 2007.

(*NOTE: Hotel requires first night room deposit or credit card guarantee*)

**SEDAR Review Workshop Panel Tasks:**

The SEDAR 13 Review Workshop Panel will evaluate assessments of the Small Coastal Shark Complex, Atlantic sharpnose shark, finetooth shark, blacknose shark, and bonnethead shark. During the evaluation the panel will consider data, assessment methods, and model results. The evaluation will be guided by Terms of Reference that are specified in advance. The Review Workshop panel will document its findings in a Peer Review Consensus Summary (Annex I). The Consensus Summary is a SEDAR product, not a product of the CIE. Separate CIE reviewer reports will also be produced, as described in Annex II, to provide distinct, independent analyses of the technical issues and of the SEDAR process.

*SEDAR 13 Review Workshop Terms of Reference:*

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

II. Evaluate the adequacy, appropriateness, and application of methods used to assess the stock.

III. Recommend appropriate estimates of stock abundance, biomass, and exploitation (if possible).

IV. Evaluate the methods used to estimate population benchmarks and management parameters; recommend values for management benchmarks (MSY, Fmsy, Bmsy, MSST, MFMT ) and provide declarations of stock status.

V. Evaluate the adequacy, appropriateness, and application of the methods used to project future population status; recommend appropriate estimates of future stock condition (if possible).

VI. Evaluate the adequacy, appropriateness, and application of methods used to characterize uncertainty, considering input data, model fit, and model configuration. Ensure that the implications of uncertainty with regard to status determinations and management values are clearly stated.

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

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

IX. Consider the research recommendations provided by the Data and Assessment workshops and make any additional recommendations warranted. Clearly indicate the research and monitoring needs that may appreciably improve the reliability of future assessments. Recommend an appropriate interval for the next assessment and whether a benchmark or update assessment should be considered.

X. Prepare a Peer Review Consensus Summary summarizing these evaluations and addressing each Term of Reference. Complete the Advisory Report summarizing key assessment results. (Consensus Report to be drafted by the

Panel during the review workshop with a final report due two weeks after the workshop ends.)

NOTES: 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*.

The panel shall ensure that corrected estimates are provided by addenda to the assessment report 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.

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

*SEDAR Review Workshop Panel Supplementary Instructions*

The review panel Chair is responsible for reviewing documents prior to the workshop, conducting the meeting during the workshop in an orderly fashion, compiling and editing the Peer Review Consensus Summary for each species assessed and submitting it to the Shark SEDAR Coordinator by a deadline specified. The review panel chair may participate in panel deliberations and contribute to report preparation.

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

The Chair and SEDAR Coordinator will work with the appointed reviewers to assign tasks during the workshop. For example, the Chair may appoint one panelist to serve as assessment leader for each assessment covered by the review, with the leader responsible for providing an initial draft consensus report text for consideration by the panel. Reviewers may alternatively be assigned particular terms of reference to initially address. However, regardless of how initial drafting is accomplished, all panelists are expected to participate in discussion of all terms of reference and all aspects of the review.

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

coordinate with the technical staff present to determine which requests can be accomplished and prioritize desired analyses.

Any changes in assessment results stemming from modifications or corrections solicited by the review panel will be documented in an addendum to the assessment report. If updated estimates are not available for review by the conclusion of the workshop, the review panel shall agree to a process for reviewing the final results.

The review panel should not provide specific management advice. Such advice will be provided by existing HMS management committees, such as its Advisory Panel, following completion of the assessment.

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

Statement of Tasks for Technical Reviewers:

Roles and responsibilities:

1. Approximately 3 weeks prior to the meeting, the CIE reviewers shall be provided with the stock assessment reports, associated supporting documents, and review workshop instructions including the Terms of Reference. Reviewers shall read these documents to gain an in-depth understanding of the stock assessment, the resources and information considered in the assessment, and their responsibilities as reviewers.
2. During the Review Panel meeting, reviewers shall participate in panel discussions on assessment methods, data, validity, results, recommendations, and conclusions as guided by the Terms of Reference. The reviewers also shall participate in the development of a Peer Review Consensus Summary report, as described in Annex I. Reviewers may be asked to serve as an assessment leader during the review to facilitate preparing first drafts of review reports.
3. Following the Review Panel meeting, the reviewers shall work with the chair to complete and review the Peer Review Panel Reports. Reports shall be completed, reviewed by all 3 panelists, and comments submitted to the Chair by August 24, 2007. The Chair shall then finalize the Reports and provide them to the Shark SEDAR Coordinator by August 31, 2007[1].
4. Following the Review Panel meeting, each reviewer shall prepare an individual CIE Reviewer Report. These reports shall be submitted to the CIE no later than August 31, 2007, addressed to the "University of Miami Independent System for Peer Review," and sent to Dr. David Sampson, via email to David.Sampson@oregonstate.edu, and to Mr. Manoj Shivlani, via

[1] The Chair role is outside of the CIE peer review process. The Chair was responsible for only compiling the Consensus Report, which is separate from the independent CIE reports.

email to mshivlani@rsmas.miami.edu. See Annex II for complete details on the report outline.

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

**Workshop Final Reports:**

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

**Submission and Acceptance of CIE Reports**

The CIE shall provide via e-mail the individual CIE Reviewer Reports to the COTR, Dr. Stephen Brown (stephen.k.brown@noaa.gov) for review and approval, based on compliance with this Statement of Work, by September 14, 2007. The COTR shall notify the CIE via e-mail regarding acceptance of the reports within two working days of receipt. Within two working days of the COTR's approval, the CIE shall provide the final individual CIE Reviewer Reports to the COTR in pdf format.

The COTR shall provide the final CIE Reviewer Reports to:

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

Julie A. Neer, NMFS Southeast Fisheries Science Center, Panama City Laboratory, 3500 Delwood Beach Road, Panama City, Florida 32408 (email, Julie.neer@noaa.gov)

Margo Schulze-Haugen, NMFS, Highly Migratory Species Division, 1315 East-West Highway, Silver Spring, Maryland 20910 (email, margo.schulze-haugen@noaa.gov)

**For Additional Information or Emergency:**

Julie A. Neer, NMFS Southeast Fisheries Science Center, Panama City Laboratory, 3500 Delwood Beach Road, Panama City, Florida 32408 (email, Julie.neer@noaa.gov)

**Draft Agenda**

**SEDAR 13: Small Coastal Sharks**

***Monday, August 6, 2007***

| | |
|---|---|
| **1:00 p.m.** | **Convene** |
| **1:00 p.m. – 1:30 p.m.** | **Introductions and Opening Remarks**<br>**Neer**<br>*- Agenda Review, Task Assignments* |
| **1:30 p.m. – 3:00 p.m.** | **Small Coastal Sharks Assessment Presentation**<br>**Cortés**<br>*Data, Methods, Results Evaluation* |
| **3:00 p.m. – 3:30 p.m.** | **Break** |
| **3:30 p.m. – 4:30 p.m.** | **Small Coastal Sharks Discussion**<br>**Chair**<br>*- Data, Methods, Results Evaluation*<br>*- identify additional analyses, sensitivities, corrections* |
| **4:30 p.m. – 6:00 p.m.** | **Finetooth Shark Assessment Presentation**<br>**Cortés**<br>*Data, Methods, Results Evaluation*<br>*- identify additional analyses, sensitivities, corrections* |
| **6:00 p.m. – 8:00 p.m.** | **Dinner Break** |
| **8:00 p.m. – 10:00 p.m.** | **Evening session if necessary**<br>**Chair**<br>*- Continue deliberations or work session* |

***Tuesday, August 7, 2007***

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|---|---|
| **8:00 a.m. – 10:00 a.m.** | **Small Coastal Sharks Discussion**<br>**Chair**<br>*- Review additional analyses, sensitivities*<br>*- Initial recommendations and comments* |
| **10:00 a.m. – 11:30 a.m.** | **Finetooth Shark Discussion**<br>**Chair**<br>*- Review additional analyses, sensitivities*<br>*- Initial recommendations and comments* |
| **11:30 a.m. – 1:00 p.m.** | **Lunch Break** |
| **1:00 p.m. – 3:00 p.m.** | **Atlantic Sharpnose Shark Assessment Presentation**<br>**TBD**<br>*- Data, Methods, Results Evaluation*<br>*- identify additional analyses, sensitivities, corrections* |
| **3:00 p.m. – 3:30 p.m.** | **Break** |

**3:30 p.m. – 6:00 p.m.** **Atlantic Sharpnose Shark Discussion**
**Chair**

*- Data, Methods, Results Evaluation*
*- identify additional analyses, sensitivities, corrections*

**6:00 p.m. – 8:00 p.m.** **Dinner Break**

**8:00 p.m. – 10:00 p.m.** **Evening session if necessary**
**Chair**

*- Continue deliberations or work session*

***Wednesday, August 8, 2007***

**8:00 a.m. – 10:00 a.m.** **Atlantic Sharpnose Shark Discussion**
**Chair**
*- Review additional analyses, sensitivities*
*- Initial recommendations and comments*

**10:00 a.m. – 11:30 a.m.** **Blacknose Shark Assessment Presentation**
**Siegfried**

*- Data, Methods, Results Evaluation*
*- identify additional analyses, sensitivities, corrections*

**11:30 a.m. – 1:00 p.m.** **Lunch Break**

**1:00 p.m. – 3:00 p.m.** **Blacknose Shark Discussion**
**Chair**

*- Data, Methods, Results Evaluation*
*- identify additional analyses, sensitivities, corrections*

**3:00 p.m. – 3:30 p.m.** **Break**

**3:30 p.m. – 4:30 p.m.** **Bonnethead Shark Assessment Presentation**
**Siegfried**

*- Data, Methods, Results Evaluation*
*- identify additional analyses, sensitivities, corrections*

**4:30 p.m. – 6:00 p.m.** **Bonnethead Shark Discussion**
**Siegfried**

*- Data, Methods, Results Evaluation*
*- identify additional analyses, sensitivities, corrections*

**6:00 p.m. – 8:00 p.m.** **Dinner Break**

**8:00 p.m. – 10:00 p.m.** **Evening session if necessary**
**Chair**

*- Continue deliberations or work session*

***Thursday, August 9, 2007***

**8:00 a.m. – 10:00 a.m.** **Blacknose Shark Discussion**
**Chair**

*- Review additional analyses, sensitivities*
*- Initial recommendations and comments*

**10:00 a.m. – 11:30 a.m.** **Bonnethead Shark Discussion**
**Chair**

| | |
|---|---|
| | *- Review additional analyses, sensitivities*<br>*- Initial recommendations and comments* |
| **11:30 a.m. – 1:00 p.m.** | **Lunch Break** |
| **1:00 p.m. – 3:00 p.m.** | **Review Workshop Terms of Reference**<br>**Chair** |
| | *- Review TORs and draft consensus statements* |
| **3:00 p.m. – 3:30 p.m.** | **Break** |
| **3:30 p.m. – 6:00 p.m.** | **Continue TOR review**<br>**Chair** |
| **6:00 p.m. – 8:00 p.m.** | **Dinner Break** |
| **8:00 p.m. – 10:00 p.m.** | **Evening session if necessary**<br>**Chair** |
| | *- Continue deliberations or work session* |

***Friday, August 10, 2007***

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| **8:00 a.m. – 1:00 p.m.** | **Final Review of Panel Documents**<br>**Chair** |
| | *- Small Coastal Sharks Consensus Summary*<br>*- Atlantic Sharpnose Shark Consensus Summary*<br>*- Blacknose Shark Consensus Summary*<br>*- Finetooth Shark Consensus Summary*<br>*- Bonnethead Shark Consensus Summary* |
| **1:00 p.m.** | **ADJOURN** |

## Annex I. SEDAR Review Workshop Document Contents

**Consensus Summary Outline**

I. Terms of Reference

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

II. Further Analyses and Evaluations

*Summary and findings of review panel analytical requests not previously addressed in TOR discussion above.*

III. Additional Comments

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

IV. Recommendations for Future Workshops

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

V. Reviewer Statements

*Each individual reviewer should provide a statement attesting whether or not the contents of the Consensus Report provide an accurate and complete summary of their views on the issues covered in the review. Reviewers may also make any additional individual comments or suggestions desired.*

## ANNEX II: Contents of CIE Reviewer Report

1. The reviewer report shall be prefaced with an executive summary of findings and/or recommendations.

2. The main body of the reviewer report shall consist of a background, description of review activities, summary of findings, and conclusions/recommendations. Reviewers are encouraged to elaborate on any points raised in the Consensus Summary Report that they feel might require further clarification. Reviewers are also encouraged to provide any criticisms and suggestions for improvement of the SEDAR process.

3. The reviewer report shall include as separate appendices a copy of the CIE Statement of Work and a bibliography that includes all materials provided for review.

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