January 6, 1998

Dr. William W. Fox, Jr.
Director, Office of Science and Technology
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910

Dear Dr. Fox:

I write to you as Chairman of the Steering Committee for the Independent Peer Review System being operated by UM.

The program has completed its first review. For this review, Dr. Robert Mohn (Canada) participated in the 28th NEFSC SARC (Woods Hole, November 30 to December 4, 1998). At the request of the Center, Dr. Mohn's activities were the same as those of any other SARC participant. As such, the primary product of his review will be reflected in the SARC documents that are being finalized by the NEFSC. Nevertheless, we asked Dr. Mohn to provide us with a brief summary of his activities and findings, which I enclose. It is my understanding that your Office will forward the document to the appropriate places in NMFS.

Another review (rockfish, SWFSC) will take place in early February. I will send you the report of that review and subsequent ones after the reviews are completed.

Sincerely,

Robert K. Cowen
Professor and Maytag Chair of Ichthyology

xc: Steering Committee Members
       V. Restrepo

encl.: Statement of Work
       Review
       Email with comments from T. Smith, SARC Chair

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STATEMENT OF WORK

Consulting Agreement Between The University of Miami and Robert Mohn

November 2, 1998

General

The consultant (R. Mohn) will participate in the 28th Stock Assessment Workshop of the National Marine Fisheries Service's Northeast Fisheries Science Center (NEFSC), in Woods Hole, MA, November 30-December 4, 1998. The consultant is expected to participate actively in the meeting, offering advice and constructive criticism on the assessments, and helping to draft the management advice for the stocks being reviewed.

Specific

1) Read and become familiar with the assessment reports provided in advance to him (these documents will be mailed directly by the NEFSC to the consultant);

2) Participate actively in the discussions during the week-long SARC (SAW) meeting;

3) Offer constructive criticism of all the assessments;

4) Assist in the drafting of the management advice for each stock; and

5) Serve, when requested, as a "SARC leader" (i.e., take the lead in evaluating/critiquing the assigned stock, ensure that final SARC documents appropriately reflect the consensus of the SARC, assist the rapporteur in preparing the second draft of the relevant species section of the "SARC Consensus Summary of Assessments" including its later review, ensure that research recommendations are properly recorded), assist rapporteur in preparing the second draft of the relevant species section of the "Advisory Report on Stock Status" during the meeting and consult with SAW Chairman after meeting, review final drafts of both reports after meeting). The consultant may be asked to become SARC Leader for the American plaice stock.

6) No later than December 11, 1998, the consultant will submit a written report of his review activities, findings and recommendations. This report should be addressed to the "UM Independent System for Peer Reviews", and sent to Victor Restrepo, UM/RSMAS, 4600 Rickenbacker Causeway, Miami, FL 33149 (email: vrestrepo@rsmas.miami.edu).

Report to the UM Independent System for Peer Reviews.
Submitted by R. Mohn for SARC Meeting of SAW - 28

Activities:

Upon receipt of the relevant documents, they were read and summarized and questions compiled. At the Stock Assessment Review Committee (SARC), I acted as the SARC Leader for American plaice. The SARC reviewed five stocks (American plaice, Cape Cod yellowtail flounder, Georges Bank winter flounder, Southern New England sinter flounder and white hake) and I actively participated in all discussions and in the drafting of management advice. As well, during breaks in the meeting, I would try to talk the various individual researchers aside and give specific technical recommendations for analysis or ideas for to clarify the presentation of results.

Review related observations:

1) Although the 5 stocks under review would be considered minor stocks, some of which were analytically assessed for the first time, significant effort was obviously spent in data preparation, especially in the estimation of discards. The methods employed, typically a production model (Prager's ASPIC) and virtual population analysis (VPA) based on Gavaris's ADAPT and using bootstrap error analysis, have been widely reviewed and used; no errors or software related problems were detected. This being said, there were no technical reasons evident for not accepting the assessments. One practice I observed, and will incorporate into my own assessments, is trying several related models and reporting in a tabular fashion goodness of fit criteria and principle variables (F and biomass in terminal year). This practice gives an enhanced insight into the underlying uncertainty which cannot be inferred from uncertainties related to the goodness of fit from a particular model alone.

2) This SARC seem to have been beset with a number of problems that were brought on because of multiple transitions: SARC Chair was new, control rules were mostly written in the context of production models (which are age aggregated) but were being recast in age-disaggregated, assessment models. There also seemed to be a transition from 'old' and 'new' overfishing definitions. Finally, the use and implications of harvest control rules were still being learnt.

3) There is real need for standard outputs and formats, e.g. axes labels, - we were still debating their format on Friday PM. One set of labels that might help is a superscript on F denoting metric (full, average, Biomass weighted, etc.) and subscript for type (target, s.q., 0.1, etc.). There was discussion of a brief exposition on this topic and it was concluded that an explanatory page or two would be completed after the meeting. I volunteered to help specifically on this topic but as of yet have not been contacted.

4) Control rules are often in terms of total biomass and some confusion surrounds this measure. The first question is whether total biomass is based on 1+ from VPA or from a surplus production model. Then if it is based on a production model, is the total biomass

inferred from a research vessel (RV) series or the fishable biomass from commercial fishing catch and effort data. In the latter case it would be a measure of fishable rather than total biomass. Care is required that the correct measure is used and consistent comparisons made.

5) As both age aggregated and disaggregated results are shown in the assessment and summary documentation there is a need for extra care in labeling the various Fs and Bs so that links can be made back to the various models and to control rules and stock recruit plots.

6) The RV data were generally much longer time series than the VPAs (on the order of 15 versus 30 years) and I felt were under-used in reference to stock history - for example in constructing stock-recruit relationships. In most cases q's at age were available do convert the indices directly into biomass.

7) The production model, ASPIC, was used in a number of ways, some of which did not seem logically consistent. This model was often used to infer long-term dynamics because of its less demanding data requirements. When the catchability, q, was in agreement with q's from the VPA, the model was accepted. When the q's were inconsistent with those from a, the q's were discarded and VPA results were used to scale the production model's estimated of long term biomass trajectory. In some cases, a q constrained fit using the VPA based q, was attempted which did not converge. The decision to keep the time trend of the production model but rescale it to the VPA seems to have been founded on a pers. comm. with Prager who observed that the q was more difficult to estimate than the other parameters. A more systematic investigation of this practice is warranted. It would be useful to try some other production models, for example, the CEDA package from MRAG, Imperial College or perhaps a method employing likelihood profiles for the parameters.

8) All VPAs used a plus group. This is not common for assessments in our Region of Canada. I do not know the implications of this practice compared to truncating the matrices at an old age but just mention it. Perhaps a methods workshop could review the practice; I believe the upcoming COMFIE Group from ICES has this item on its agenda.

9) I made, or at least tried to make, these comments during the meeting, although perhaps not as clearly as I can do now when there is time to revise and reconsider. Several were acted upon during the SARC and several will influence future assessments. I do not believe they were incorporated into the formal "Research Recommendations", which were compiled on a stock by stock basis. I have not seen the final report; this observation is based on memory only.

10) Notwithstanding comment 1) above, my main criticism of the assessments is that more models were not tried. I realize the time constraints involved while carrying out assessments and that this is a rather open ended request. However, after the data are in order, such explorations may not take much time and can be quite useful in extending the understanding of stock status and risk assessment.

To: Victor Restrepo <vrestrepo@rsmas.miami.edu>
Subject: Re: SARC and Review

Victor,

You wrote:

> I just wanted to get your impressions on Bob Mohn's participation at the
> SARC. This feedback will help me seek ways to improve the program in the
> future.

Bob was an excellent choice. If he reflects the general quality of the
'pool' of assessment experts we will be well served by the program.

To be more specific, as you know, any such panel has a unique dynamic.
In this case, the panel was rather reticent and, at times, it was
difficult to elicit much discussion (from the panel, that is; if you've
attended one of our SARCs you know that the NEFSC scientists in
attendance are anything but reluctant to raise and discuss issues!).
Bob, however, was a constant and useful contributor to the dialog and
was instrumental in moving things along on more than one occasion.

We would be delighted to have Bob participate in future SARCS. He is a
very capable assessment scientist and very effective in the kind of
forum that we call the SARC.

Additionally, and I think relevant to the effectiveness of this kind of
expert-by-nomination exercise, Bob's good humor, wit, and patience were
much appreciated. His presence positively contributed to the 'culture'
of the meeting, a sometimes overlooked, but nevertheless important part
of any professional get together.

In short, we were very pleased with your selection.

Terry