

## **Reviewer's Report for the Centre of Independent Experts (University of Miami)**

### **STAR Panel of the Pacific Fishery Management Council**

Date: 25 to 29 June, 2001

Site: Santa Cruz, California

Purpose of review: Review stock assessments for black and yelloweye rockfish and offer comment on a proposed method for assessing data-poor stocks.

### **STAR Panel Members**

Erik Williams, Southeast Fisheries Science Center (Chair)

Rick Stanley, Department of Fisheries and Oceans, Canada (DFO rep.)

Stephen J. Smith, Department of Fisheries and Oceans, Canada (External reviewer)

John Geibel, California Department of Fish and Game

Tom Jagielo, Washington Department of Fish and Wildlife (SSC)

### **PFMC Committee Representatives**

Dave Thomas, GMT

Kelly Smotherman, GAP

### **STAT Team Members Present**

Yelloweye rockfish:

Farron Wallace, Washington Department of Fish and Wildlife.

Black rockfish:

Stephen Ralston and Alec D. MacCall, Southwest Fisheries Science Center, Santa Cruz Laboratory.

Reviewer's Travel Itinerary:

- 23 June: Depart Halifax, NS 17:00 (ADT) arrive San José, CA 19:40 (PDT).
- 24 June: Drive from San José to Santa Cruz arriving at 12:00.
- 30 June: Drive from Santa Cruz to San José arriving at 06:00.
- 30 June: Depart San José, CA 07:30 (PDT) arrive Halifax, NS 19:30 (ADT).

## **Review activities**

One week prior to the meeting, I received four documents prepared for the STAR panel meeting via FEDEX. The document for the yelloweye assessment contained the necessary tables and figures along with a summary of the base run of the stock synthesis model proposed for the assessment. Text was minimal but there were section headings with references to the relevant tables and figures for each section. On the other hand, the black rockfish document had complete text, tables and figures describing the available data, but details on the model configuration and summary of the model fit were not available until the first day of the meeting

Prior to traveling on June 24, I was able to spend one day reviewing the material provided (including a draft document on methods for assessing data poor stocks and another document detailing a meta-analysis of rockfish catchabilities to trawl gear).

The review process was set by panel chair (Erik Williams) according to the following format. Each Stock Assessment (STAT) team would present its assessment in full, starting with yelloweye on the afternoon of 25 June, followed by black rockfish on the morning of 26 June. The presentation of each assessment was informal with questions from the panel welcome at any time during the presentation. Rick Stanley volunteered to be the rapporteur for yelloweye, and I was responsible for the black rockfish. Lists of additional work were prepared during the week by each rapporteur and given to the respective STAT teams. Results from these additional assignments were reported throughout the week. The main objective of this work was to arrive at a consensus on the base-population model for each species to be used to assess the stock status and forecast population trajectories over the next few years.

The rapporteurs' summary reports, along with the chair's comments, will form the first draft of the STAR panel report for eventual inclusion in the Pacific Fishery Management Council's (PFMC) Stock Assessment and Evaluation (SAFE) (please spell out) document. Rick Stanley and I delivered draft summary reports to Erik Williams (Williams?) on 29 June, right after the meeting had ended.

Members of the STAT teams consulted with the panel members via email over the first three weeks of July with respect to clarifying options for projections and how to present sensitivity analyses. Drafts of the complete STAR Panel report were circulated during the second and third week of July for review by the panel. Complete stock assessment documents were to be circulated by the STAT teams by the third week of July for review as well. The yelloweye document was distributed during the week of 9 July while the black rockfish document was to be sent out 27 July. Some additional analyses were either suggested or actually conducted by STAT teams but could not be included in the panel reports because the STAR panel had not officially reviewed them.

## **Assessment of review process**

I have participated in a number of assessment review meetings over the years (Canadian Atlantic Fisheries Scientific Advisory Committee, Canadian Department of Fisheries Regional Advisory Process, National Marine Fisheries Stock Assessment Review Committee, International Pacific Halibut Commission) as well as providing reports for the Canadian Pacific Stock Assessment Review Committee meetings. I have found that personnel in every jurisdiction have difficulties in preparing full assessment documents in time for the review meeting. There appear to be three major reasons for these problems.

In the first place, data are difficult to attain, verify, and explore in time for the meeting. This is especially true if the data were collected by outside agencies or departments and not by the agency for which the stock assessment scientist works. Indeed, for this meeting, recreational catch rate data from California (California Party Fishing Vessel data) were not delivered to the stock assessment scientists until the first day of the STAR panel meeting. In fact, I am not sure that the STAT teams were even aware that these data were available until they were delivered.

Second, in many agencies, there are pre-assessment workshops or internal reviews to critique the stock assessment before the main review panel meeting. However, it is often the case that assessments are still in a rudimentary state when presented at such workshops; consequently, much work remains to be done before the review panel meeting without much opportunity for pre-review of the model.

Finally, the task of doing a stock assessment is additional to a scientist's regular duties and often has to share priority with these other duties. Despite this, the STAT team members (see above) did an excellent job of preparing their assessments and should be commended for their work. Any shortcomings have to be ascribed to these workload issues or to data issues.

Most of the data used by the STAT teams were collected by agencies other than their own. In many cases (e.g., catch rate data from the Oregon Dept. of Fish and Wildlife [ODF&W] and Marine Recreational Fishery Statistical System [MRFSS]) were highly aggregated by port, season and area. The details of how this aggregation was done and even about how some of the quantities were calculated not available to the STAT teams. Questions about trends and apparent anomalies in these data raised by panel members could not be answered during the meeting. These concerns were particularly important for the catch rate series because the stock assessment models were highly dependent upon the trends in these data. The panel had to accept these data as the best available but a number of questions were included in the panel reports requesting clarification of sampling designs and directing STAT members to obtain more disaggregated data in the future.

Both stock assessments used the length-based version of the Stock Synthesis software package to model the population dynamics. In several cases, the panel was unable to request additional analyses due to limitations of this software (e.g., maximum number of

length bins), limitations of the STAT team members' knowledge about the software and the mechanics of the computations. The last user's manual was reported to be published in 1996, and many changes to the software had been implemented since then. It is my understanding that the author of the software, Rick Methot, is usually available to help with the modelling, but he was on vacation during our meeting. Still the documentation should be such that Rick can go on leave when he wants. Better documentation should be supplied for the Stock Synthesis software or STAT team members should consider using more flexible and open code systems to do their assessments in the future. My criticisms and everyone else's of the documentation do not imply criticism of the methods used in the Stock Synthesis software; rather, it is just that we weren't always sure what the software was doing.

All of the above factors resulted in STAT members doing a large amount of intensive work during the meeting with little time for them to reflect on what they were doing. In fact, some of this reflection occurred after the meeting, and ideas were transmitted via email to panel members. Unfortunately, by this time, the formal review meeting was over and most of these ideas could not be included in the assessments.

### **Roles and composition of panel**

The panel meeting operated more in a workshop capacity than as a peer review meeting with members trying to guide STAT team members in building their models and react to changes that STAT members had made to their models. The panel meeting conducted more of a pre-review function than that of a review of the implications of the final stock assessment models for the management of the fisheries.

In my opinion, the members of the panel were extremely helpful and dedicated to understanding the stock assessments and helping the STAT team members with their work. Erik Williams did an excellent job of chairing the meeting. I think that the expertise represented by the members was appropriate for evaluating the stock assessments with the following exceptions. Given the importance of recreational fisheries and the dependence upon recreational data, a representative from RECFIN/MRFSS should have been present at the meeting. Also, data from Oregon Department of Fish and Wildlife was a major component of assessments, but no one from that department attended the meeting.

I also feel that we did not make good use of Kelly Smotherman's (fisherman and Groundfish Advisory Subpanel [GAP] member) expertise. We spent a lot of time in discussions of the inner workings of stock assessment models, and Mr. Smotherman was effectively excluded from these discussions. I think that his time would have been better spent trying to ground the results of the stock assessment models in reality based on his experiences. Unfortunately, the final models were really not available until the end of the week.

## **Duration**

The week that was set aside for the meeting was barely enough time for the STAT teams to prepare all they had been asked to do during the meeting. Five days plus travel time was as much as most panel members could dedicate to this process as well. Indeed, the duration of the meeting should also include the time panel members and STAT teams have put into this process after the meeting was over.

Respectfully submitted on 27 July, 2001,

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