



South Pacific Regional Fisheries Management Organisation

2nd Meeting of the Scientific Committee

Honolulu, Hawaii, USA

1-7 October 2014

SC-02-INF-02

Discussion Presentation used for July 2014 SPRFMO Web meeting

Report on Inter-Sessional assessment/research by Participants

1. Inter-sessional assessments
2. Age/growth status for SC2
3. Acoustic survey standardization
4. Stock Assessments
 - a) Updating of data sets for additional stock assessment runs
 - b) Selection and specification of base-case assessment
 - additional stock assessment sensitivity runs to be conducted
5. Advice to the Commission on Jack Mackerel stock status
6. Review and evaluate the rebuilding plan adopted by the 2nd Commission Meeting
7. Other announcements/issues

Jack mackerel stock assessments conducted inter-sessionally

- New contributions or research papers
 - Perú—book of papers available
 - EU / Perú fisheries data utility workshop
- New data to be used in the assessment
 - Catch
 - CPUE: Chile C-S fleet update—to 2013? by IFOP and others
 - Length frequencies?
- Model specifications developed from SC1
 - Added flexibility in selectivity forms
 - Natural mortality-at-age

1. Review inter-sessional work

Chilean data developments

- CPUE for south-central zone (Fleet 2)
 - To 2014
- Catch-at-age for south-central zone (Fleet 2)
 - End of August 2014
 - What about catch-age for fleet 1?
- Wt-at-age for south-central zone (Fleet 2)
- Landings by fleet (1 and 2)
- Unsure if acoustic surveys results completed
 - Northern

IFOP (Chile) to prepare

- Brief reports on
 - BRP of jack mackerel from international project on Chilean harvest strategy
 - Behavior of harvest control rule from Commission
 - CPUE standardization (if necessary)
 - Question from Jorge: if it captures areal distribution and concentration of the stock and if it shows the right perception of the stock...From La Jolla, two blocks in catchability to treat CPUE as a new index (showing the increase)...also applies to the Chinese fleet and reflects offshore abundance too

Others

- China has updated CPUE thru 2013
- Suggests to discuss details on CPUE at SC2

Age and growth

- Rodolfo to update
 - Sample exchanges continuing?
 - Juveniles sent from Chile from North (Chile) and from S-C Perú
 - But not from S-C Chile—will check prior
 - Need a work plan
 - Need to have a work plan to further the exchange
 - Question on if there are things that will affect this year's assessment?
 - Unlikely, validation is needed

Acoustic standardizations

- Chile
 - N Chile updated, available in Aug
- Perú
 - Ricardo, workshop was organized by EU (F. Gerlotto)
 - Plan is to have a paper prepared as before for the Peruvian data
- Others
 - EU Project from fisheries acoustics, not ready for application yet, steps to work toward standardization were addressed, calibration needed, shows promise but not ready for assessment

Modeling

- Suggestions
 - Use 1.4 from SC1 as base-case
 - Conduct fewer model runs
 - Develop multi-stock model (one model to deal with multiple stocks)
 - Single datafile, generate same results from two runs with same assumptions as before
 - Progress being made, unsure if completed in time?
 - Can be useful for future ability to allow exchanges among regions etc.
 - Question if R package had been developed?
 - Started the package, with Niels' script, continues hope to be completed by SC2

Stock rebuilding analysis

The Commission requested the SC to review and evaluate the Rebuilding and Conservation plan presented below by:

- Implementing a default **Harvest Control Rule (HCR)** following the guidelines specified below
- Develop an operating model to test the performance of this HCR under unknown and uncertain conditions/realities
- Alternative HCRs can be entertained to set annual catch limits to evaluate as part of the rebuilding plan
- Propose performance statistics which will enable the Commission to evaluate this and other HCRs.

Stock status	TAC calculation method
$SSB_t \leq 80\%$ of B_{MSY} (or proxy)	<p>1) Compute yield (C_{trial}) at estimated F_{2013} or F_{MSY} (whichever is smaller)</p> <p><i>If $C_{trial} < C_{replacement}$</i> Set catch at or below C_{trial} <i>(the stock will increase)</i></p> <p><i>Else if $C_{trial} > C_{replacement}$</i> Set catch at or below $C_{replacement}$ <i>(the stock remains stable)</i></p>
$SSB_t > 80\%$ of B_{MSY} (or proxy) and $SSB_t \leq B_{MSY}$ (or proxy)	<p>2) Compute yield (C_{trial}) at estimated F_{MSY} (or proxy)</p> <p><i>If $C_{trial} < C_{replacement}$</i> Set catch at or below C_{trial} <i>(the stock will increase)</i></p> <p><i>Else if $C_{trial} > C_{replacement}$</i> Use method 1)</p>
$SSB_t > B_{MSY}$ (or proxy)	3) Set catch at or below value based on F_{MSY}

Note that SSB_t is the estimated spawning stock biomass in the next year, $C_{replacement}$ is the catch in a future year which would keep SSB the same. For example, if the catch in 2014 resulted in 2014 SSB being equal to subsequent 2015 SSB then that catch is defined as the replacement yield.

Performance statistics of HCR

1. The rate of biomass growth during a certain time frame
2. Expected catch and catch variability
3. Risks of biomass decline, and
4. Expected time to reach X% of unfished SSB (a proxy representing 80% of B MSY)

Allocation issue?

- High-seas distribution effects?
- Ability to predict distribution among regions
- Expectations of where fish might appear
- Chile may present a paper on alternative allocation
 - Affected by selectivity, optimal allocation review
 - Plan a document to present
- Software has the ability (for single-stock case) to do

Assessment Timeline goals

- Mid August
 - Finalize inputs and model specifications
 - Begin new draft assessment
- Begin September
 - Draft report

Catch updates

From Craig

Reports progressing well

Summary closing comments

- Jim to circulate record of meeting
- Another meeting?